

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 479  
Injection pump  
Pump designation : PES6P120A720LS7257  
: 0  
EP type number : 9 400 087 086  
Governor  
Governor design. : RQV300...1050PA1029  
: 4  
Governor no. : 9 420 080 340  
Cust. part No. : 0250742202

## Customer-spec. information

Customer : MBB  
Motor : OM 447 LA  
Power KW : 257.6

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

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Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

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Rated speed rpm : 300

Rack travel in mm : 5.30  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 14.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 5.45  
 Tolerance mm : + 0.25

Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 7.80  
 Tolerance mm : + 0.10

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 0.75  
 Tolerance mm : + 0.25

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.55  
 Tolerance mm : + 0.25

Rated speed rpm : 1165  
 guide sleeve  
 travel mm : 9.45  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1120

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1100

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 247.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 55.0  
 tolerance degree : + 4.0

control lever  
 position degree : 121.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 12.70  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1170  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 82.0  
 tolerance degree : + 4.0

control lever  
position degree : 17.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 350

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TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1100  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 720  
rack travel mm : 2.65  
Tolerance mm : ± 0.15

Pressure hPa : 400  
rack travel mm : 0.80  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

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LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

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End of test specification sheet





# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 481  
Injection pump  
Pump designation : PES6P120A320/3RS3264  
EP type number : 9 400 087 075  
Governor  
Governor design. : RQV350/870...900PA11  
: 11  
Governor no. : 9 420 080 356  
Cust. part No. : 3355248

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Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTA  
Power kW : 207.0

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## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : ± 0.1C  
Check  
tolerance °NW : ± 0.23

Barrel no. : 1

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## BASIC SETTING

Rated speed rpm : 870

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Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

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Del. quantity  
cm<sup>3</sup>/1000 strokes : 223.0

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Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

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Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

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Speed

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Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 6.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

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GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 4.50  
Tolerance mm : ± 0.10

Rated speed rpm : 910  
guide sleeve  
travel mm : 5.75  
Tolerance mm : ± 0.25

Rated speed rpm : 250  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 400  
guide sleeve  
travel mm : 2.75  
Tolerance mm : ± 0.25

Rated speed rpm : 980  
guide sleeve  
travel mm : 8.85  
Tolerance mm : ± 0.25

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GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 945

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 870  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 223.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

control lever  
position degree : 111.0  
tolerance degree : ± 4.0

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ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 919  
rack travel mm : 11.60

Rated speed rpm : 955  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1050

Rated speed rpm : 920  
rack travel mm : 11.60

Rated speed rpm : 956  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1050

Rated speed rpm : 921  
rack travel mm : 11.60

Rated speed rpm : 957  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1050

Rated speed rpm : 922  
rack travel mm : 11.60

Rated speed rpm : 958  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1050

Rated speed rpm : 923  
rack travel mm : 11.60

Rated speed rpm : 959  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1050

Rated speed rpm : 924  
rack travel mm : 11.60

Rated speed rpm : 960  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1050

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#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 18.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.20  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 350

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#### TORQUE CONTROL

Rated speed rpm : 870  
rack travel mm : 12.65  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 12.65  
Tolerance mm : ± 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80

Check  
speed 1/min : < 290

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

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LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.03.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 482  
Injection pump  
Pump designation : PES6P120A320/3RS3264  
EP type number : 9 400 087 075  
Governor  
Governor design. : RQV350/720...750PA11  
: 12  
Governor no. : 9 420 080 357  
Cust. part No. : 3355249

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTA  
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 720  
Rack travel in mm : 11.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

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Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

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Rated speed rpm : 350

Rack travel in mm : 5.80  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 600  
 guide sleeve  
 travel mm : 4.50  
 Tolerance mm : + 0.10

Rated speed rpm : 820  
 guide sleeve  
 travel mm : 8.25  
 Tolerance mm : + 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.05  
 Tolerance mm : + 0.25

Rated speed rpm : 420  
 guide sleeve  
 travel mm : 3.35  
 Tolerance mm : + 0.25

Rated speed rpm : 770  
 guide sleeve  
 travel mm : 5.75  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 805

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 720  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 215.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 106.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 900

LOW IDLE

control lever  
 position degree : 71.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 5.80  
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 365

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TORQUE CONTROL

Rated speed rpm : 720  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  14.0

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LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

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End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 483  
Injection pump  
Pump designation : PES5P120A720LS7280  
EP type number : 9 400 087 087  
Governor  
Governor design. : RQV300...950PA1029  
Governor no. : 9 420 080 358  
Cust. part No. : 0250744402

Customer-spec. information  
Customer : MBB  
Motor : OM 449 LA  
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 5- 4- 2  
Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 12.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0



Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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Rated speed rpm : 300  
Rack travel in mm : 5.10  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

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GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : +- 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : +- 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : +- 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : +- 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : +- 0.25

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GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

Rack travel in mm : 16.50  
Tolerance mm : +- 1.30

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : +- 4.0

control lever  
position degree : 117.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 1005  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1115  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : +- 4.0

control lever  
position degree : 15.0  
tolerance degree : +- 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

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### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.25  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 12.25  
Tolerance mm : ± 0.05

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### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.25  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 2.00  
Tolerance mm : ± 0.10

Pressure hPa : 360  
rack travel mm : 0.55  
Tolerance mm : ± 0.05

#### Start Interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 484

Injection pump  
Pump designation : PES5P120A720LS7280  
EP type number : 9 400 087 087

Governor  
Governor design. : RQV300...1050PA1114  
Governor no. : 9 420 080 361

Cust. part No. : 0240747602

Customer-spec. information

Customer : MBB  
Motor : OM 449 A  
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0

Prestroke mm : 4.65  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30  
Tolerance mm : +- 0.10

Del. quantity  
cm3/1000 strokes : 194.0

Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : +- 4.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.30  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 5.45  
 Tolerance mm : ± 0.25

Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 7.80  
 Tolerance mm : ± 0.10

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 0.75  
 Tolerance mm : ± 0.25

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.55  
 Tolerance mm : ± 0.25

Rated speed rpm : 1165  
 guide sleeve  
 travel mm : 9.45  
 Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1120

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 800

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 194.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 55.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 121.0  
 tolerance degree : ± 4.0

RATED SPEED  
 rack travel mm : 11.10  
 Rated speed rpm : 1110  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1170  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 82.0  
 tolerance degree : ± 4.0

control lever  
position degree : 17.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 13.10  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
rack travel mm : 12.80  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
rack travel mm : 12.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 800

MEASUREMENT

Pressure hPa : 360  
rack travel mm : -1.50  
Tolerance mm : ± 0.10

Pressure hPa : 500  
rack travel mm : -0.50  
Tolerance mm : ± 0.10

Pressure hPa : 1080  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

Pressure hPa : 1200  
rack travel mm : 0.60  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 800  
Del. quantity

cm<sup>3</sup>/1000 strokes : 220.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance

cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity

cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 485

Injection pump  
Pump designation : PES5P120A720LS7280  
EP type number : 9 400 087 087

Governor  
Governor design. : RQV300...950PA1029  
Governor no. : 9 420 080 363

Cust. part No. : 0250744502

Customer-spec. information

Customer : MBB  
Motor : OM 449 LA  
Power KW : 220.7

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75  
Tolerance mm : ± 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 263.5

Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance cm<sup>3</sup>/1000 strokes : 5.0



Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : ± 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : ± 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure

hPa : 1300  
Del. quantity

cm<sup>3</sup>/1000 strokes : 263.5  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance

cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : ± 4.0

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.70  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

control lever  
position degree : 18.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.30  
Tolerance mm : + 0.10

Rated speed rpm : 100  
CRT mm min. : > 9.00

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.75  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.75  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 13.75  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 2.85  
Tolerance mm : + 0.15

Pressure hPa : 480  
rack travel mm : 0.90  
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 486  
Injection pump  
Pump designation : PES5P120A720LS7329  
EP type number : 9 400 087 088  
Governor  
Governor design. : RQV300...1050PA1055  
Governor no. : 9 420 080 337

Cust. part No. : 4750747002

## Customer-spec. information

Customer : MBB  
Motor : OM449LA  
Power KW : 220.8

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
Rack travel in mm : 6.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
guide sleeve  
travel mm : 7.65  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.40  
Tolerance mm : ± 0.20

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.25  
Tolerance mm : ± 0.25

Rated speed rpm : 900  
guide sleeve  
travel mm : 5.85  
Tolerance mm : ± 0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 9.55  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1

Rated speed rpm : 1140  
Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

control lever  
position degree : 115.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.10  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

control lever  
position degree : 13.0

tolerance degree : +- 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 400

---

### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 15.15  
Tolerance mm : +- 0.05

Rated speed rpm : 700  
rack travel mm : 15.15  
Tolerance mm : +- 0.05

---

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 15.15  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 600

### MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 820  
rack travel mm : 3.85  
Tolerance mm : +- 0.15

Pressure hPa : 500  
rack travel mm : 1.30  
Tolerance mm : +- 0.10

### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80

Check  
speed 1/min : < 240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
  
Combination No. : 9 400 087 487  
  
Injection pump  
Pump designation : PES6P120A720LS7176  
: 0  
EP type number : 0 412 726 869  
  
Governor  
Governor design. : RQV300...1050PA1142  
Governor no. : 9 420 080 368

Cust. part No. :

Customer-spec. information

Customer : MBB  
Motor : OM447 A  
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 177.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed



Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.20  
 Tolerance mm : + 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 7.65  
 Tolerance mm : + 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.40  
 Tolerance mm : + 0.20

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.25  
 Tolerance mm : + 0.25

Rated speed rpm : 900  
 guide sleeve  
 travel mm : 5.85  
 Tolerance mm : + 0.25

Rated speed rpm : 1210  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

B01

control lever  
 position degree : - 1  
 Rated speed rpm : 1140

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 177.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 59.0  
 tolerance degree : + 4.0

control lever  
 position degree : 114.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 12.00  
 Rated speed rpm : 1103  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
 Rated speed rpm : 1185  
 Tolerance 1/min : + 15

rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 68.0  
 tolerance degree : + 4.0

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.20

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.75  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 13.05  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 13.05  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 600

MEASUREMENT

Pressure hPa : 250  
rack travel mm : -1.30  
Tolerance mm : ± 0.10

Pressure hPa : 380  
rack travel mm : -0.40  
Tolerance mm : ± 0.10

Pressure hPa : 690

Pressure hPa : 770  
rack travel mm : 0.30  
Tolerance mm : ± 0.10

Start interlock

B02

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80

Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 488

Injection pump  
Pump designation : PES6P120A720RS3338  
EP type number : 9 400 087 089

Governor  
Governor design. : RQV350...1150PA923  
: K  
Governor no. : 9 420 030 370

Cust. part No. :

Customer-spec. information

Customer : YULIN  
Motor : FNH 7.8L  
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.40  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.60  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 29.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.90  
 Tolerance mm : + 0.10

Rated speed rpm : 1200  
 guide sleeve  
 travel mm : 9.60  
 Tolerance mm : + 0.10

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 7.90  
 Tolerance mm : + 0.10

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 6.60  
 Tolerance mm : + 0.20

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 2.35  
 Tolerance mm : + 0.15

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

B05

Aneroid pressure  
 hPa : 900

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 68.0  
 tolerance degree : + 4.0

control lever  
 position degree : 118.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60  
 Rated speed rpm : 1215  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1350  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1450

---

LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
 position degree : 14.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 5.60  
 Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 6.90

Rated speed rpm : 425

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.65  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

Rated speed rpm : 550  
rack travel mm : 11.20  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 900  
rack travel mm : 13.65  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 8.20  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1150  
Pressure hPa : 635  
rack travel mm : 12.70  
Tolerance mm : ± 0.20

Pressure hPa : 365  
rack travel mm : 9.65  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check speed 1/min : > 80  
Check speed 1/min : < 310

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.00  
Tolerance mm : ± 0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 489

Injection pump  
Pump designation : PES6P120A720RS3338  
EP type number : 9 400 087 089

Governor  
Governor design. : RQV350...1150PA923  
: K  
Governor no. : 9 420 080 371

Cust. part No. :

Customer-spec. information  
Customer : YULIN  
Motor : FNH 7.8L  
Power KW : 156.6

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 006

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.40  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread



Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.70  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 29.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.90  
 Tolerance mm : + 0.10

Rated speed rpm : 1200  
 guide sleeve  
 travel mm : 9.60  
 Tolerance mm : + 0.10

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 7.90  
 Tolerance mm : + 0.10

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 6.60  
 Tolerance mm : + 0.20

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 2.35  
 Tolerance mm : + 0.15

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : 900

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 159.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 71.0  
 tolerance degree : + 4.0

control lever  
 position degree : 121.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.50  
 Rated speed rpm : 1215  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1350  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1420

---

LOW IDLE

control lever  
 position degree : 65.0  
 tolerance degree : + 4.0

control lever  
 position degree : 16.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : +- 0.10

Rated speed rpm : 275

CRT mm min. : > 6.70

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.55  
Tolerance mm : +- 0.05

Rated speed rpm : 750  
rack travel mm : 12.50  
Tolerance mm : +- 0.10

Rated speed rpm : 550  
rack travel mm : 11.50  
Tolerance mm : +- 0.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 900  
rack travel mm : 13.55  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 8.70  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 500  
rack travel mm : 12.40  
Tolerance mm : +- 0.20

Pressure hPa : 300  
rack travel mm : 10.15  
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 290

Check speed 1/min : > 80

Check speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900

Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 168.0

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0

Spread

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Aneroid pressure hPa : -

Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 108.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.00

Tolerance mm : +- 0.40

Del. quantity cm3/1000 strokes : 170.0

Tolerance cm3/1000 strokes : +- 20.0

Check tolerance cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 350

Del. quantity cm3/1000 strokes : 29.5

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 491

Injection pump  
Pump designation : PE6P120A720RS3069  
EP type number : 0 411 826 712

Governor  
Governor design. : RQV300...1000PA1164  
Governor no. : 9 420 080 373

Cust. part No. :

Customer-spec. information  
Customer : IVECO-ARGENTINA  
Motor : IVECO 8210.22  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.95  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 8.70  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.35  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : + 0.25

Rated speed rpm : 1150  
guide sleeve  
travel mm : 10.05  
Tolerance mm : + 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure  
hPa : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 63.0  
tolerance degree : + 4.0

control lever  
position degree : 117.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

control lever  
position degree : 13.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00  
Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.80  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 210  
rack travel mm : 10.50  
Tolerance mm : ± 0.10

Pressure hPa : 280  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 600

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
 Test oil : ISO 4113  
 Combination No. : 9 400 087 492  
 Injection pump  
 Pump designation : PES6P110A12ORS7214  
 EP type number : 0 412 716 805  
 Governor  
 Governor design. : RQV350...1100PA964  
 : 7K  
 Governor no. : 9 420 080 374  
 Cust. part No. : 3355823

Customer-spec. information  
 Customer : CUMMINS  
 Motor : 6CTAA-290  
 Power kW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
 Test oil inlet  
 temp. °C : 40  
 Tolerance °C : + 2.0  
 Overflow valve : 1 417 413 047  
 Inlet press. bar : 1.5  
 Test nozzle holde  
 assembly : 1 688 901 101  
 Opening pressure  
 bar : 208.5  
 Tolerance bar : + 1.5  
 Test lines : 1 680 750 008  
 Outside diameter : 6.0

B15

x inside diameter : 2.0  
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
 Tolerance bar : + 1.0  
 Prestroke mm : 4.40  
 Tolerance mm : + 0.05  
 Check  
 tolerance mm : + 0.10  
 Rack travel in mm : 10.50  
 Tolerance mm : + 1.50  
 Firing order : 1- 5- 3- 6- 2-  
 : 4  
 Phasing : 0-60-120-180-240  
 Tolerance : + 0.50  
 Check  
 tolerance °NW : + 0.75  
 Start of delivery blocking  
 °NW after s.o.d. : 6.00  
 Tolerance : + 0.10  
 Check  
 tolerance °NW : + 0.23  
 Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
 Rack travel in mm : 13.95  
 Tolerance mm : + 0.05  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 186.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.60  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200  
guide sleeve  
travel mm : 9.10  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.90  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.20  
Tolerance mm : ± 0.20

Rated speed rpm : 700  
guide sleeve  
travel mm : 6.10  
Tolerance mm : ± 0.20

Rated speed rpm : 1400  
guide sleeve  
travel mm : 10.90  
Tolerance mm : ± 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.65  
Rated speed rpm : 1150  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1345  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1500

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.60  
Tolerance mm : ± 0.20



Rated speed rpm : 275  
CRT mm min. : > 6.50  
Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 1100  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 12.90  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

#### MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 1200  
rack travel mm : 14.30  
Tolerance mm : ± 0.10

Pressure hPa : 600  
rack travel mm : 10.45  
Tolerance mm : ± 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 240

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 250

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.20  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 25.0

---

#### LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
  
Combination No. : 9 400 087 493  
  
Injection pump  
Pump designation : PES6P120A720LS7114  
: 3  
EP type number : 0 412 726 867  
  
Governor  
Governor design. : RQ300/1050PA911-5  
Governor no. : 9 420 080 375  
  
Cust. part No. : 0250747002

Customer-spec. information

Customer : MBB  
Motor : OM447 LA  
Power kW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 067  
  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 6- 2- 4- 1- 5-  
: 3  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600  
  
Rack travel in mm : 12.40  
Tolerance mm : ± 0.10  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.5  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
guide sleeve  
travel mm : 6.70  
Tolerance mm : + 0.20

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.95  
Tolerance mm : + 0.15

Rated speed rpm : 600  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 6.40  
Tolerance mm : + 0.10

Rated speed rpm : 1175  
guide sleeve  
travel mm : 9.75  
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 40.0  
tolerance degree : + 4.0

control lever  
position degree : 101.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.30  
Rated speed rpm : 1103  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

control lever  
 position degree : 11.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.00  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 380  
 Tolerance 1/min : ± 20

Rated speed rpm : 100

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600  
 rack travel mm : 12.40  
 Tolerance mm : ± 0.10

Rated speed rpm : 1050  
 rack travel mm : 12.40  
 Tolerance mm : ± 0.10

Rated speed rpm : 750  
 rack travel mm : 12.40  
 Tolerance mm : ± 0.10

ANEROID/ALTITUDE  
 COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600  
 Pressure hPa : 1050

MEASUREMENT

Pressure hPa : 300  
 rack travel mm : -1.80  
 Tolerance mm : ± 0.10

Pressure hPa : 400  
 rack travel mm : -0.90  
 Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 220

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 195.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 750  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 198.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 126.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 496

Injection pump  
Pump designation : PES6P120A320/3RS3264  
EP type number : 9 400 087 075

Governor  
Governor design. : RQV350...1100PA1206  
Governor no. : 9 420 080 378

Cust. part No. : 3355762

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTA  
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 9.00  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Reck travel in mm : 6.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.05  
Tolerance mm : + 0.25

Rated speed rpm : 1075  
guide sleeve  
travel mm : 7.60  
Tolerance mm : + 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.65  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.45  
Tolerance mm : + 0.25

Rated speed rpm : 1200  
guide sleeve  
travel mm : 9.30  
Tolerance mm : + 0.20

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1150

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : + 4.0

control lever  
position degree : 115.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300



---

**LOW IDLE**

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

control lever  
position degree : 15.0  
tolerance degree : ± 4.0

**Testing:**

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 375

---

**TORQUE CONTROL**

Rated speed rpm : 1100  
rack travel mm : 10.85  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 10.85  
Tolerance mm : ± 0.05

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 10.85  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

**MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 1.55  
Tolerance mm : ± 0.15

Pressure hPa : 350

**B25**

rack travel mm : 0.50  
Tolerance mm : ± 0.10

**Start interlock**

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

**LOW IDLE**

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 498  
Injection pump  
Pump designation : PES6P120A120RS3344  
EP type number : 9 400 087 090  
Governor  
Governor design. : RQV350...1103PA1216  
Governor no. : 9 420 080 380  
Cust. part No. : 3355978

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 CTAA - 250  
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 076  
Inlet press. bar : 3.0  
Test nozzle holder assembly : 1 688 901 019  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.15  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 15.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery blocking  
°NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.23  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 14.55  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 184.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 6.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.55  
Tolerance mm : ± 0.25

Rated speed rpm : 1150  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.55  
Tolerance mm : ± 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.05  
Tolerance mm : ± 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 10.55  
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1150

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 63.0  
tolerance degree : ± 4.0

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.50  
Rated speed rpm : 1155  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1350  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1500

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 6.40  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.55  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 14.55  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 14.55  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 680  
rack travel mm : 0.85  
Tolerance mm : ± 0.15

Pressure hPa : 530

C01

rack travel mm : 0.30  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 255

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 275

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.97  
 Test oil : ISO 4113  
 Combination No. : 9 400 087 500  
 Injection pump  
 Pump designation : PES6P120A720LS7257  
 : 0  
 EP type number : 9 400 087 086  
 Governor  
 Governor design. : RQV300...950PA1242  
 Governor no. : 9 420 080 387  
 Cust. part No. : 0260746602

Customer-spec. information

Customer : MBB  
 Motor : OM 447 LA  
 Power KW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
 Test oil inlet  
 temp. °C : 40  
 Tolerance °C : ± 2.0  
 Overflow valve : 1 417 413 047  
 Inlet press. bar : 2.0  
 Test nozzle holde  
 assembly : 1 688 901 105  
 Opening pressure  
 bar : 208.5  
 Tolerance bar : ± 1.5  
 Test lines : 1 680 750 075  
 Outside diameter : 8.0

C03

x inside diameter : 3.0  
 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
 Tolerance bar : ± 1.0  
 Prestroke mm : 4.65  
 Tolerance mm : ± 0.05  
 Check  
 tolerance mm : ± 0.10  
 Rack travel in mm : 21.00  
 Firing order : 6- 2- 4- 1- 5-  
 : 3  
 Phasing : 0-60-120-180-240  
 Tolerance : ± 0.30  
 Check  
 tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 600  
 Rack travel in mm : 14.25  
 Tolerance mm : ± 0.05  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 275.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300  
Rack travel in mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 4.55  
Tolerance mm : ± 0.25  
Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.70  
Tolerance mm : ± 0.10  
Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25  
Rated speed rpm : 500  
guide sleeve  
travel mm : 3.45  
Tolerance mm : ± 0.25  
Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.55  
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : - 1

C04

Rated speed rpm : 1120  
Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : ± 4.0  
control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 1000  
Tolerance 1/min : ± 5  
rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15  
rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1230

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0  
control lever  
position degree : 17.0



tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 9.20

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.25  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 14.25  
Tolerance mm : + 0.05

Rated speed rpm : 840  
rack travel mm : 13.90  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 14.25  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 760  
rack travel mm : 2.25  
Tolerance mm : + 0.15

Pressure hPa : 500  
rack travel mm : 0.90  
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1300  
Rated speed rpm : 950  
Del. quantity cm<sup>3</sup>/1000 strokes : 245.5

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000s. : + 5.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure hPa : 1300  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 265.5

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000s. : + 5.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 146.5

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000s. : + 4.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000s. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 501

Injection pump  
Pump designation : PES5P120A720LS7280  
EP type number : 9 400 087 087

Governor  
Governor design. : RQV300...950PA1249  
Governor no. : 9 420 080 389

Cust. part No. : 4750747302

Customer-spec. information  
Customer : MBB  
Motor : OM 449 LA-EURO I  
Power KW : 220.7

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
Rack travel in mm : 5.30  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : + 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : + 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : + 4.0

control lever  
position degree : 117.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : + 4.0

control lever  
position degree : 18.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800  
rack travel mm : 2.85  
Tolerance mm : ± 0.15

Pressure hPa : 480  
rack travel mm : 0.90  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

C09

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 502

Injection pump  
Pump designation : PES6P120A720LS7257  
: 0  
EP type number : 9 400 087 086

Governor  
Governor design. : RGV30C...950PA1262  
Governor no. : 9 420 080 394

Cust. part No. : 0260749902

Customer-spec. information

Customer : MBB  
Motor : OM 447 LA  
Power KW : 301.6

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 301.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm <sup>3</sup> /1000S.	: 9.0
--	-------

Rated speed rpm	: 300
Rack travel in mm	: 5.50
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 17.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance cm <sup>3</sup> /1000S.	: + 6.0
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 700
guide sleeve travel mm	: 5.45
Tolerance mm	: + 0.25

Rated speed rpm	: 1050
guide sleeve travel mm	: 7.80
Tolerance mm	: + 0.10

Rated speed rpm	: 300
guide sleeve travel mm	: 0.75
Tolerance mm	: + 0.25

Rated speed rpm	: 500
guide sleeve travel mm	: 3.55
Tolerance mm	: + 0.25

Rated speed rpm	: 1165
guide sleeve travel mm	: 9.45
Tolerance mm	: + 0.25

GUIDE SLEEVE POSITION

control lever position degree	: - 1
----------------------------------	-------

Rated speed rpm	: 1120
Rack travel in mm	: 16.50
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1400
Del. quantity cm <sup>3</sup> /1000 strokes	: 301.5
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 52.0
tolerance degree	: + 4.0

control lever position degree	: 118.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 13.60
Rated speed rpm	: 990
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1130
Tolerance 1/min	: + 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1250

LOW IDLE

control lever position degree	: 82.0
tolerance degree	: + 4.0

control lever position degree	: 17.0
----------------------------------	--------



tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1400  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1000  
rack travel mm : 2.75  
Tolerance mm : ± 0.15

Pressure hPa : 660  
rack travel mm : 1.00  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400  
Rated speed rpm : 950  
Del. quantity cm<sup>3</sup>/1000 strokes : 284.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 1400  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 293.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.02.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 503  
Injection pump  
Pump designation : PES5P120A720LS7280  
EP type number : 9 400 087 087  
Governor  
Governor design. : RQV300...950PA1263  
Governor no. : 9 420 08G 392  
Cust. part No. : 0270740102

Customer-spec. information  
Customer : MBB  
Motor : OM 449 LA-EUROII  
Power KW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 5- 4- 2  
Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 13.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 253.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
Rack travel in mm : 5.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : ± 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : ± 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 253.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : ± 4.0

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.10  
Rated speed rpm : 1005  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1220

---

LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

control lever  
position degree : 18.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.30  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.15  
Tolerance mm : + 0.05

Rated speed rpm : 900  
rack travel mm : 13.15  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 13.50  
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700  
rack travel mm : 1.75  
Tolerance mm : + 0.15

Pressure hPa : 500

rack travel mm : 0.60  
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200

Rated speed rpm : 950

Del. quantity cm<sup>3</sup>/1000 strokes : 234.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 5.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 1200

Rated speed rpm : 750

Del. quantity cm<sup>3</sup>/1000 strokes : 246.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 5.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500

Del. quantity cm<sup>3</sup>/1000 strokes : 143.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 504  
Injection pump  
Pump designation : PESSP120A720LS7280  
EP type number : 9 400 087 087  
Governor  
Governor design. : RQV300...950PA1264  
Governor no. : 9 420 080 393  
Cust. part No. : 0270740002

Customer-spec. information  
Customer : MBB  
Motor : OM 449 LA-EURO I  
Power KW : 235.4

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 5- 4- 2  
Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 14.15  
Tolerance mm : ± 0.05  
Del. quantity  
cm3/1000 strokes : 286.5  
Tolerance  
cm3/1000 strokes : ± 1.0  
Check tolerance  
cm3/1000S. : ± 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.10  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : + 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

C20

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 53.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80  
Rated speed rpm : 1010  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1220

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + 4.0

control lever  
position degree : 17.0  
tolerance degree : + 4.0



Testing:

Rated speed rpm : 300  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.15  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 14.15  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 14.15  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 14.15  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 940  
rack travel mm : 2.35  
Tolerance mm : ± 0.15

Pressure hPa : 600

rack travel mm : 0.70  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80

Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 950

Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.5  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 505

Injection pump  
Pump designation : PE6P110A720RS3289-1  
EP type number : 0 411 816 795

Governor  
Governor design. : RSV350...1100P1A626  
Governor no. : 9 420 082 332

Cust. part No. : 1377813

---

Customer-spec. information  
Customer : SCANIA  
Motor : DS1192A  
Power KW : 186.0

---

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.35  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Beginning of delivery differende

and maximum rack  
travel : 10.50  
Tolerance mm : ± 1.50  
Difference ° CS : 2.00

---

## BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 350

Rack travel in mm : 5.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
position degree : 49.0  
tolerance degree : + 4.0

control lever  
position degree : 99.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.20  
Rated speed rpm : 950  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 995  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1070

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

control lever  
position degree : 24.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.50  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min : + 30  
  
Rated speed rpm : 100  
  
CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 11.25  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 11.30  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.25  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : 1.10  
Tolerance mm : + 0.10

Pressure hPa : 150  
rack travel mm : 0.35  
Tolerance mm : + 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.02.97  
Test oil : ISO 4113

Combination No. : 9 400 087 506

Injection pump  
Pump designation : PES6P120A320/3RS3365  
EP type number : 9 400 087 092

Governor  
Governor design. : RSV450...900P1A628  
Governor no. : 9 420 082 333

Cust. part No. :

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAAG  
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.40  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.23

Earrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 450

Rack travel in mm : 4.50

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 5.75

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : + 4.0

control lever  
position degree : 109.0  
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 942  
rack travel mm : 10.80

Rated speed rpm : 982  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1030

Rated speed rpm : 943  
rack travel mm : 10.80

Rated speed rpm : 983  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1030

Rated speed rpm : 944  
rack travel mm : 10.80

Rated speed rpm : 984  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50

Rated speed rpm : 1030

Rated speed rpm : 945  
rack travel mm : 10.80

Rated speed rpm : 985  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1030

Rated speed rpm : 946  
rack travel mm : 10.80

Rated speed rpm : 986  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1030

Rated speed rpm : 947  
rack travel mm : 10.80

Rated speed rpm : 987  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1030

---

LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : + 4.0

control lever  
position degree : 31.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450  
rack travel mm : 4.00  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 450  
rack travel mm : 4.50

Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 485  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 11.85  
Tolerance mm : + 0.05

Rated speed rpm : 550  
rack travel mm : 11.85  
Tolerance mm : + 0.05

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm3/1000 strokes : 302.0  
Tolerance  
cm3/1000 strokes : + 10.0  
Check tolerance  
cm3/1000s. : + 14.0

---

LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm3/1000 strokes : 18.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000s. : + 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000s. : 12.0



---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113  
Combination No. : F 000 409 004  
Injection pump  
Pump designation : PES6P120A720RS3256  
EP type number : 9 400 087 080  
Governor  
Governor design. : RQV350...1300PA1311  
Governor no. : F 000 420 106

Cust. part No. : 0270748502

---

Customer-spec. information  
Customer : MBB  
Motor : OM 366 LA  
Power KW : 139.8

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 2.0  
Test nozzle holder  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 11.15  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 7.50  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : + 0.25

Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : + 0.10

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.25  
 Tolerance mm : + 0.25

Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : + 0.25

Rated speed rpm : 1460  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1360

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 900

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 148.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 56.0  
 tolerance degree : + 4.0

control lever  
 position degree : 113.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.20  
 Rated speed rpm : 1355  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1460  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1570

LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : + 4.0

control lever  
position degree : 23.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 7.50  
Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 10.50

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.20  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 370  
rack travel mm : 0.95  
Tolerance mm : ± 0.15

Pressure hPa : 230  
rack travel mm : 0.40  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.97  
Test oil : ISO 4113  
Combination No. : F 000 409 102  
Injection pump  
Pump designation : PES6P120A720LS7257  
: 1  
EP type number : F 000 400 201  
Governor  
Governor design. : RQV300...950PA1242  
Governor no. : 9 420 080 387  
Cust. part No. : 0270749402

## Customer-spec. information

Customer : MBB  
Motor : OM 447 LA  
Power kW : 264.8

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 2.0  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

006

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 6- 2- 4- 1- 5-  
: 3  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 13.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300  
Rack travel in mm : 5.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 4.55  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.70  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.45  
Tolerance mm : + 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.55  
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : - 1

Rated speed rpm : 1120  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : + 4.0  
control lever  
position degree : 117.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.20  
Rated speed rpm : 1000  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1230

LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : + 4.0

control lever  
position degree : 16.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.45  
Tolerance mm : +- 0.05

Rated speed rpm : 950  
rack travel mm : 13.15  
Tolerance mm : +- 0.05

Rated speed rpm : 750  
rack travel mm : 13.45  
Tolerance mm : +- 0.05

Rated speed rpm : 900  
rack travel mm : 13.15  
Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 13.45  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850  
rack travel mm : 2.55  
Tolerance mm : +- 0.15

Pressure hPa : 550  
rack travel mm : 0.90  
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0



---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : F 000 409 200

Injection pump  
Pump designation : PES4A95D410RS2774  
EP type number : 9 400 084 019

Governor  
Governor design. : RQV30J...1300AB1321L  
Governor no. : F 000 420 300

Cust. part No. : 0270745902

---

Customer-spec. information  
Customer : MBB  
Motor : OM 364 A  
Power KW : 85.0

---

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

---

BASIC SETTING

Rated speed rpm : 1300

---

Rack travel in mm : 10.35  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 300  
Rack travel in mm : 7.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + 0.05

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + 0.25

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + 0.10

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : + 4.0

control lever  
position degree : 108.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.30  
Rated speed rpm : 1365  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1485  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1640

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

control lever  
position degree : 19.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 100  
CRT mm min. : > 8.00  
Rated speed rpm : 485

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 300  
rack travel mm : 0.55  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 84.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 6.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113  
Combination No. : F 000 409 201  
Injection pump  
Pump designation : PES6A95D410RS2918  
EP type number : F 000 400 400  
Governor  
Governor design. : RQV300...1300AB1324  
Governor no. : F 000 420 301

Cust. part No. : 3760747202

Customer-spec. information

Customer : MBB  
Motor : OM 366 A  
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0

Prestroke mm : 3.05  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10

Rack travel in mm : 10.50  
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.25  
Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

Rated speed rpm : 300

Rack travel in mm : 9.20

Tolerance mm : +- 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 19.0

Tolerance

cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance

cm<sup>3</sup>/1000s. : +- 4.5

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance

cm<sup>3</sup>/1000s. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500

guide sleeve

travel mm : 8.95

Tolerance mm : +- 0.05

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : +- 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : +- 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.65

Tolerance mm : +- 0.10

---

##### GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : +- 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 800

Del. quantity

cm<sup>3</sup>/1000 strokes : 81.0

Tolerance

cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance

cm<sup>3</sup>/1000s. : +- 3.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000s. : 8.0

---

##### CONTROL LEVER

control lever

position degree : 58.0

tolerance degree : +- 4.0

control lever

position degree : 111.0

tolerance degree : +- 4.0

##### RATED SPEED

rack travel mm : 10.20

Rated speed rpm : 1365

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1505

Tolerance 1/min : +- 15

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1640

---

##### LOW IDLE

control lever

position degree : 76.0

tolerance degree : +- 4.0

control lever

position degree : 20.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 9.20  
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 585

---

TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 11.25  
 Tolerance mm : ± 0.05

Rated speed rpm : 750  
 rack travel mm : 12.05  
 Tolerance mm : ± 0.05

Rated speed rpm : 950  
 rack travel mm : 11.50  
 Tolerance mm : ± 0.05

Rated speed rpm : 800  
 rack travel mm : 12.05  
 Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
 Pressure hPa : 800  
 rack travel mm : 12.00  
 Tolerance mm : ± 0.05

Pressure hPa : -  
 Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550  
 rack travel mm : 1.80  
 Tolerance mm : ± 0.10

Pressure hPa : 350  
 rack travel mm : 0.80  
 Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 250

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 800  
 Rated speed rpm : 800  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 81.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 42.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 13.50  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 78.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 7.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 10.0

---

LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.03.97  
Test oil : ISO 4113  
Combination No. : 9 400 085 393  
Injection pump  
Pump designation : PES4A95D410RS2887  
EP type number : 9 400 084 040  
Governor  
Governor design. : RQV300...1300AB1311L  
Governor no. : 9 420 080 390  
Cust. part No. : 0260746802

Customer-spec. information  
Customer : MBB  
Motor : OM 364 LA/EURO I  
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 12.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 300  
 Rack travel in mm : 8.30  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : + 0.05

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.05  
 Tolerance mm : + 0.25

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 2.55  
 Tolerance mm : + 0.25

Rated speed rpm : 750  
 guide sleeve  
 travel mm : 4.20  
 Tolerance mm : + 0.10

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1500

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 99.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
 position degree : 62.0  
 tolerance degree : + 4.0

control lever  
 position degree : 111.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 11.40  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1515  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1640

---

LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : + 4.0

control lever  
 position degree : 22.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 8.30  
 Tolerance mm : + 0.10

Rated speed rpm : 100  
CRT mm min. : > 10.20  
Rated speed rpm : 415

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.45  
Tolerance mm : +- 0.05

Rated speed rpm : 800  
rack travel mm : 12.85  
Tolerance mm : +- 0.05

Rated speed rpm : 1050  
rack travel mm : 12.45  
Tolerance mm : +- 0.05

Rated speed rpm : 900  
rack travel mm : 12.60  
Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 12.85  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 200  
rack travel mm : 0.85  
Tolerance mm : +- 0.05

Pressure hPa : 400  
rack travel mm : 2.10  
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80

Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.70  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 10.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 436  
Injection pump  
Pump designation : PE6P110A32ORS3108V  
EP type number : 0 411 816 737  
Governor  
Governor design. : RQV250...1100PA1120  
Governor no. : 9 420 080 364

Cust. part No. : 8133051

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : THD 101 KC  
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 13.75  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 181.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 250

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.50  
Tolerance mm : ± 0.20

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.50  
Tolerance mm : ± 0.40

Rated speed rpm : 700  
guide sleeve  
travel mm : 6.50  
Tolerance mm : ± 0.20

Rated speed rpm : 1100  
guide sleeve  
travel mm : 7.25  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1175

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 181.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

control lever  
position degree : 119.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.70  
Rated speed rpm : 1165  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1255  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : ± 4.0

control lever  
position degree : 11.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 5.40  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 375  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 6.80

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.75  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.75  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 750  
rack travel mm : 3.45  
Tolerance mm : + 0.05

Pressure hPa : 300  
rack travel mm : 0.85  
Tolerance mm : + 0.15

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113

Combination No. : 9 400 087 437

Injection pump  
Pump designation : PE6P110A320RS3108Y  
EP type number : 0 411 816 729

Governor  
Governor design. : RQV250...1100PA589  
Governor no. : 9 420 080 288

Cust. part No. :

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : THD 100 EC  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 139.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Speed



Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 250

Rack travel in mm : 5.30  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 32.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.20

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.20  
 Tolerance mm : + 0.10

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 4.50  
 Tolerance mm : + 0.40

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.20

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 7.25  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1175

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 900

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 139.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
 position degree : 65.0  
 tolerance degree : + 4.0

control lever  
 position degree : 119.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.10  
 Rated speed rpm : 1165  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 6.70

Rated speed rpm : 338

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 430  
rack travel mm : 1.20  
Tolerance mm : ± 0.10

Pressure hPa : 280  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113  
Combination No. : 9 400 087 438  
Injection pump  
Pump designation : PE6P110A32ORS3108X  
EP type number : 0 411 816 730  
Governor  
Governor design. : RQV250...1100PA589  
Governor no. : 9 420 080 288

Cust. part No. :

---

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : THD100 ED  
Power KW : 203.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 12.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 250

Rack travel in mm : 5.10  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 32.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.20

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.20  
 Tolerance mm : + 0.10

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 4.50  
 Tolerance mm : + 0.40

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.20

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 7.25  
 Tolerance mm : + 0.25

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1175

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 900

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 65.0  
 tolerance degree : + 4.0

control lever  
 position degree : 119.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10  
 Rated speed rpm : 1165  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

---

LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 6.70

Rated speed rpm : 338

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.45  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.15  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 2.50  
Tolerance mm : ± 0.10

Pressure hPa : 280  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700

EO1

Del. quantity  
cm<sup>3</sup>/1000 strokes : 113.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 14.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113

Combination No. : 9 400 087 439

Injection pump  
Pump designation : PE6P110A32ORS3108Z  
EP type number : 0 411 816 728

Governor  
Governor design. : RQV250...11COPA589  
Governor no. : 9 420 080 288

Cust. part No. :

---

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : THD 101 GB  
Power KW : 160.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 10.55  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 250

Rack travel in mm : 5.40  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 32.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.20

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.20  
 Tolerance mm : + 0.10

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 4.50  
 Tolerance mm : + 0.40

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.20

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 7.25  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1175

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 750

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 123.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
 position degree : 65.0  
 tolerance degree : + 4.0

control lever  
 position degree : 119.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 9.50  
 Rated speed rpm : 1165  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
position degree : 11.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 5.40  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 6.80

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 10.55  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 750  
rack travel mm : 10.55  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.70  
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 310  
rack travel mm : 10.30  
Tolerance mm : + 0.10

Pressure hPa : 265  
rack travel mm : 9.95  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.97  
Test oil :  
Combination No. : 9 400 030 669FS  
Injection pump  
Pump designation : PES6A100D320/3RS3503  
EP type number : 9 410 037 213

Governor  
Gouverner design. :  
Governer no. :

Cust. part No. : TATA-CUMMINS

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA-160  
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2;  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 9 451 037 430  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holde assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.10  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Start of delivery blocking  
°NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.29  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 11.75  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 97.7

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

---

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 400

Rack travel in mm : 6.00  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 10.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347  
 guide sleeve  
 travel mm : 8.48  
 Tolerance mm : + 0.15

Rated speed rpm : 400  
 guide sleeve  
 travel mm : 1.71  
 Tolerance mm : + 0.20

Rated speed rpm : 880  
 guide sleeve  
 travel mm : 4.97  
 Tolerance mm : + 0.25

Rated speed rpm : 499  
 guide sleeve  
 travel mm : 2.75  
 Tolerance mm : + 0.25

Rated speed rpm : 549

guide sleeve  
 travel mm : 3.30  
 Tolerance mm : + 0.25

Rated speed rpm : 560  
 guide sleeve  
 travel mm : 3.37  
 Tolerance mm : + 0.25

Rated speed rpm : 1620  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 600

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 97.7

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
 position degree : 61.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.75  
 Rated speed rpm : 1300  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1425  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1485

---

LOW IDLE

control lever  
position degree : 15.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 400  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 625  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 9.00

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.75  
Tolerance mm : ± 0.10

Rated speed rpm : 1250  
rack travel mm : 11.75  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 550  
Pressure hPa : 600  
rack travel mm : 11.75  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 550  
rack travel mm : 10.50  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 550

E07

Pressure hPa : 400  
rack travel mm : 11.20  
Tolerance mm : ± 0.20

Pressure hPa : 340  
rack travel mm : 10.80  
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 120  
Rated speed rpm : < 300

Check  
speed 1/min : > 100  
Check  
speed 1/min : < 340

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 600  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.2  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Aneroid pressure  
hPa : 600  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.4  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 64.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.00  
Tolerance mm : +- 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 10.0

---

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 846 493  
  
Injection pump  
Pump designation : PES6A90D410RS2596  
EP type number : 0 410 896 073  
  
Governor  
Governor design. : RQV300...1400AB1120  
: 1L  
Governor no. : 0 420 212 157  
  
Cust. part No. :

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM352A  
Power KW : 124.0

---

TEST BENCH REQUIREMENTS

Inlet line : 1.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

---

BASIC SETTING

Rated speed rpm : 1400  
  
Rack travel in mm : 11.95  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm3/1000 strokes : 73.5  
  
Tolerance  
cm3/1000 strokes : ± 0.5  
  
Check tolerance  
cm3/1000S. : ± 2.5  
  
Speed  
  
Tolerance  
cm3/1000 strokes : 3.0  
  
Check tolerance  
cm3/1000S. : 4.5

---

Rated speed rpm : 300

Rack travel in mm : 8.60  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1453  
 guide sleeve  
 travel mm : 8.06  
 Tolerance mm : + 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.06  
 Tolerance mm : + 0.25

Rated speed rpm : 923  
 guide sleeve  
 travel mm : 4.87  
 Tolerance mm : + 0.25

Rated speed rpm : 593  
 guide sleeve  
 travel mm : 3.46  
 Tolerance mm : + 0.25

Rated speed rpm : 643  
 guide sleeve  
 travel mm : 3.86  
 Tolerance mm : + 0.25

Rated speed rpm : 610  
 guide sleeve  
 travel mm : 3.76  
 Tolerance mm : + 0.25

Rated speed rpm : 1810  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1500

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 73.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.5

CONTROL LEVER

control lever  
 position degree : 115.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90  
 Rated speed rpm : 1445  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1585  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1750

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 8.60  
Tolerance mm : + 0.10  
Rated speed rpm : 100  
CRT mm min. : > 10.10  
Rated speed rpm : 625

---

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 11.95  
Tolerance mm : + 0.05  
Rated speed rpm : 500  
rack travel mm : 13.05  
Tolerance mm : + 0.05  
Rated speed rpm : 1000  
rack travel mm : 12.80  
Tolerance mm : + 0.10  
Rated speed rpm : 1200  
rack travel mm : 12.25  
Tolerance mm : + 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.05  
Tolerance mm : + 0.05  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.95  
Tolerance mm : + 0.05

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 220  
rack travel mm : 12.30  
Tolerance mm : + 0.10  
Pressure hPa : 320  
rack travel mm : 12.75  
Tolerance mm : + 0.05  
Start interlock  
Rated speed rpm : > 100

Rated speed rpm : < 220  
Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0  
Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.10  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 8.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm3/1000S. : 4.0

---

End of test specification sheet





# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.03.97  
Test oil : ISO 4113

Combination No. : 0 400 866 235

Injection pump  
Pump designation : PES6A95D410/3RS2907  
EP type number : 0 410 896 884

Governor  
Governor design. : RSV325...1250A5C917L  
Governor no. : 0 420 232 639

Cust. part No. : 0423 2334 KY

---

Customer-spec. information  
Customer : KHD-DMI  
Motor : F6L913  
Power KW : 89.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1250

---

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : FREE  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

governor spring  
 pre-tension  
 click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 76.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
 position degree : 102.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.35  
 Rated speed rpm : 1295  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1340  
 Tolerance 1/min : + 15

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1510

rack travel mm : 4.00  
 Rated speed rpm : 1360

---

LOW IDLE

control lever  
 position degree : 69.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
 rack travel mm : 8.00  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 325  
 rack travel mm : 8.50  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 485  
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Start interlock

---

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.00  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.03.97  
Test oil : ISO 4113  
Combination No. : 0 400 874 257  
Injection pump  
Pump designation : PES4A95D320RS2807  
EP type number : 0 410 894 994  
Governor  
Governor design. : RSV375...1125A2C898R  
Governor no. : 0 420 233 351

Cust. part No. : 8367 54718

Customer-spec. information  
Customer : SISU  
Motor : 420 DS  
Power Kw : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Firing order : 1- 2- 4- 3  
Phasing : 0-90-180-270

Beginning of delivery differende

and maximum rack  
travel : 9.00  
Tolerance mm : ± 0.50  
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1125  
Rack travel in mm : 11.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 375

Rack travel in mm : 5.60  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1125  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

CONTROL LEVER

control lever  
position degree : 101.0  
tolerance degree : + 4.0

RATED SPEED

E17

rack travel mm : 10.20  
Rated speed rpm : 1170  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1250  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1410

rack travel mm : 4.00  
Rated speed rpm : 1260

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 375  
rack travel mm : 5.10  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 375  
rack travel mm : 5.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 495  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1125  
rack travel mm : 11.25  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 11.60  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 11.55  
Tolerance mm : + 0.05

Rated speed rpm : 965  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  8.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  11.0

---

#### LOW IDLE

Rated speed rpm : 375  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.03.97  
Test oil : ISO 4113

Combination No. : 0 400 876 437

Injection pump  
Pump designation : PES6A95D32ORS2806  
EP type number : 0 410 896 898

Governor  
Governor design. : RSV375...1125A0C900R  
Governor no. : 0 420 233 353

Cust. part No. : 8358 54720

---

Customer-spec. information  
Customer : SISU  
Motor : 620D  
Power KW : 88.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

Difference ° CS : 5.00

---

## BASIC SETTING

Rated speed rpm : 1100

---

Rack travel in mm : 9.05  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 375

Rack travel in mm : 4.00  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 14.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : ± 0.20

governor spring  
 pre-tension  
 click setting x : 4.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 74.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
 position degree : 90.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.00  
 Rated speed rpm : 1145  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : ± 15

rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1350

rack travel mm : 4.00  
 Rated speed rpm : 1200

---

LOW IDLE

control lever  
 position degree : 71.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375  
 rack travel mm : 3.50  
 Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 375  
 rack travel mm : 4.00  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 455  
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

TORQUE CONTROL



Rated speed rpm : 1100  
rack travel mm : 9.05  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 9.35  
Tolerance mm : ± 0.05

Rated speed rpm : 980  
rack travel mm : 9.00  
Tolerance mm : ± 0.10

Start interlock

---

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 11.0

---

#### LOW IDLE

Rated speed rpm : 375  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 035

Injection pump  
Pump designation : PES4A95D320/3RS2880  
EP type number : 9 410 037 214

Governor  
Governor design. : RSV475...1050A0C913R  
Governor no. : F 002 A20 225

Cust. part No. : DEP: 3283693

Customer-spec. information

Motor : CUMMINS-4BTA-3.9  
Power kW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

\*NW after s.o.d. : 6.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.1

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.60

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.1  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

CONTROL LEVER

control lever  
position degree : 103.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.75  
Rated speed rpm : 1115  
Tolerance 1/min : + 5

rack travel mm : 5.90  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

rack travel mm : 5.90  
Rated speed rpm : 1195

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + 4.0

Control lever difference  
Grad : 21.0  
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.10  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 560

Tolerance 1/min : + 30  
Rated speed rpm : 100  
CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.75  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.20  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 660  
rack travel mm : 12.30  
Tolerance mm : + 0.20  
  
Pressure hPa : 460  
rack travel mm : 11.50  
Tolerance mm : + 0.20

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.97  
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump  
Pump designation : PES6P120A32ORS7372  
EP type number : 0 412 726 940

Governor  
Governor design. : RQV250...1400PA1279K  
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information  
Customer : CDC  
Motor : 6BTA  
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1455  
guide sleeve  
travel mm : 9.16  
Tolerance mm : ± 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.39  
Tolerance mm : ± 0.20

Rated speed rpm : 931  
guide sleeve  
travel mm : 5.67  
Tolerance mm : ± 0.25

Rated speed rpm : 480  
guide sleeve  
travel mm : 3.18

Tolerance mm : ± 0.25

Rated speed rpm : 1860  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 118.5  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.80  
Rated speed rpm : 1465  
Tolerance 1/min : ± 5

rack travel mm : 6.80  
Rated speed rpm : 1580  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1725

LOW IDLE

control lever  
position degree : 74.5  
tolerance degree : ± 4.0

Control lever difference  
Grad : 44.0  
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm : ± 0.20

Rated speed rpm : 200

CRT mm min. : > 8.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 13.45  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : ± 0.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1400  
Pressure hPa : 1200

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 9.80  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1400

Pressure hPa : 620  
rack travel mm : 12.40  
Tolerance mm : ± 0.20

Pressure hPa : 280  
rack travel mm : 10.70  
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 240

Check speed 1/min : > 80  
Check speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 6.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 98.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm : ± 0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 170.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 300  
Del. quantity cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet





# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 746 612  
Injection pump  
Pump designation : PES6P120A320RS7372  
EP type number : 0 412 726 940  
Governor  
Governor design. : RQV250...1300PA1282K  
Governor no. : 0 421 815 515

Cust. part No. : 3866784

## Customer-spec. information

Customer : CDC  
Motor : 6BTA  
Power KW : 187.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 093  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 515  
Outside diameter : 6.0

F01

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
Start of delivery blocking  
°NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 300

Rack travel in mm : 6.80  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355  
guide sleeve  
travel mm : 8.32  
Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.39  
Tolerance mm : + 0.20

Rated speed rpm : 885  
guide sleeve  
travel mm : 5.46  
Tolerance mm : + 0.25

Rated speed rpm : 480  
guide sleeve  
travel mm : 3.18

F02

Tolerance mm : + 0.25

Rated speed rpm : 1860  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.45  
Rated speed rpm : 1375  
Tolerance 1/min : + 5

rack travel mm : 7.50  
Rated speed rpm : 1465  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1650

LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : + 4.0

Control lever difference  
Grad : 35.0  
tolerance degree : + 6.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.80  
Tolerance mm : ± 0.20

Rated speed rpm : 250

CRT mm min. : > 8.00

Rated speed rpm : 450

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.45  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 700  
rack travel mm : 12.15  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 11.90  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1300  
Pressure hPa : 1200

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 9.45  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1300

Pressure hPa : 600  
rack travel mm : 11.50  
Tolerance mm : ± 0.20

Pressure hPa : 255  
rack travel mm : 10.00  
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : < 250

Check speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 900

Del. quantity cm<sup>3</sup>/1000 strokes : 156.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance cm<sup>3</sup>/1000S. : ± 6.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 94.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.90  
Tolerance mm : ± 0.50

Del. quantity cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 20.0

Check tolerance cm<sup>3</sup>/1000S. : ± 25.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity cm<sup>3</sup>/1000 strokes : 26.0

Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.03.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 023

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV500...1000A0C895R  
Governor no. : F 002 A20 217

Cust. part No. : 3929405

Customer-spec. information

Customer : CDC  
Motor : 6BT  
Power KW : 104.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

F05

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.95  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 101.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

Rated speed rpm	: 500
Rack travel in mm	: 5.30
Tolerance mm	: ± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 18.5
Tolerance cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.5
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
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F06

Aneroid pressure hPa	: 900
Del. quantity cm <sup>3</sup> /1000 strokes	: 101.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 91.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.90
Rated speed rpm	: 1065
Tolerance 1/min	: ± 5

rack travel mm	: 5.70
Rated speed rpm	: 1110
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1250

rack travel mm	: 5.70
Rated speed rpm	: 1110

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: ± 4.0

Control lever difference

Grad	: 17.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 500
rack travel mm	: 4.80
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 500  
rack travel mm : 5.30  
Tolerance mm : +- 0.10

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.95  
Tolerance mm : +- 0.05

Rated speed rpm : 800

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.50  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 530  
rack travel mm : 11.75  
Tolerance mm : +- 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 98.0  
Tolerance  
cm3/1000 strokes : +- 1.0  
Check tolerance  
cm3/1000S. : +- 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : +- 0.50  
Del. quantity  
cm3/1000 strokes : 120.5  
Tolerance  
cm3/1000 strokes : +- 10.0  
Check tolerance  
cm3/1000S. : +- 15.0

---

LOW IDLE

Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 18.5  
Tolerance  
cm3/1000 strokes : +- 2.0  
Check tolerance  
cm3/1000S. : +- 4.5  
Speed  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.04.97  
Test oil : ISO 4113

Combination No. : 0 402 746 617

Injection pump  
Pump designation : PES6P120A72ORS7423  
EP type number : 0 412 726 963

Governor  
Governor design. : RQV325...975PA909  
: K  
Governor no. : 0 421 815 531

Cust. part No. : 313GC5224-P10

---

Customer-spec. information  
Customer : MACK  
Motor : EN7300A  
Power kW : 223.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8  
Tolerance bar : +- 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : +- 1.0

Prestroke mm : 2.80  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10

Rack travel in mm : 10.50  
Tolerance mm : +- 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

Start of delivery blocking  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 975

---

Rack travel in mm : 12.55  
Tolerance mm : +- 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

---



Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Rack travel in mm : 5.30  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 44.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1030  
 guide sleeve  
 travel mm : 8.84  
 Tolerance mm : + 0.15

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.27  
 Tolerance mm : + 0.20

Rated speed rpm : 524  
 guide sleeve  
 travel mm : 3.30  
 Tolerance mm : + 0.25

Rated speed rpm : 390  
 guide sleeve  
 travel mm : 2.30  
 Tolerance mm : + 0.25

Rated speed rpm : 1430

guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 202.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 106.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60  
 Rated speed rpm : 1020  
 Tolerance 1/min : + 5  
 Check  
 speed 1/min : + 10

rack travel mm : 4.00  
 Rated speed rpm : 1175  
 Tolerance 1/min : + 15  
 Check  
 speed 1/min : + 20

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1250

LOW IDLE

control lever  
 position degree : 61.5  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 325

rack travel mm : 5.30  
Tolerance mm : + 0.10  
Rated speed rpm : 275  
CRT mm min. : > 6.50  
Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 975  
rack travel mm : 12.55  
Tolerance mm : + 0.05  
Rated speed rpm : 600  
rack travel mm : 12.00  
Tolerance mm : + 0.10  
Rated speed rpm : 500  
rack travel mm : 11.50  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 975  
Pressure hPa : 1200  
rack travel mm : 12.55  
Tolerance mm : + 0.05  
Pressure hPa : -  
Rated speed rpm : 975  
rack travel mm : 8.10  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 975  
Pressure hPa : 460  
rack travel mm : 11.15  
Tolerance mm : + 0.20  
Pressure hPa : 235  
rack travel mm : 9.25  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 275  
Check  
speed 1/min : > 80

Check  
speed 1/min : < 285

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0  
Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.80  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 30.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 618  
  
Injection pump  
Pump designation : PES6P120A720RS7423  
EP type number : 0 412 726 963  
  
Governor  
Governor design. : RQV325...875PA909  
: K  
Governor no. : 0 421 815 532  
  
Cust. part No. : 313GC5224-P6

Customer-spec. information

Customer : MACK  
Motor : EPN7300  
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 413 359 008  
  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.00  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 12.85  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Rack travel in mm : 5.00

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 931

guide sleeve  
travel mm : 8.41

Tolerance mm : + 0.15

Rated speed rpm : 325

guide sleeve  
travel mm : 1.79

Tolerance mm : + 0.20

Rated speed rpm : 754

guide sleeve  
travel mm : 6.98

Tolerance mm : + 0.25

Rated speed rpm : 520

guide sleeve  
travel mm : 4.05

Tolerance mm : + 0.25

Rated speed rpm : 1350  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 109.5

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.85

Rated speed rpm : 920

Tolerance 1/min : + 5

Check  
speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1075

Tolerance 1/min : + 15

Check  
speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1200

---

LOW IDLE

control lever  
position degree : 62.5

tolerance degree : + 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 225  
CRT mm min. : > 6.50

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.85  
Tolerance mm : ± 0.05

Rated speed rpm : 510  
rack travel mm : 14.05  
Tolerance mm : ± 0.10

Rated speed rpm : 400  
rack travel mm : 13.50  
Tolerance mm : ± 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 510  
Pressure hPa : 1200

Pressure hPa : -  
Rated speed rpm : 510  
rack travel mm : 8.40  
Tolerance mm : ± 0.20

#### MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 785  
rack travel mm : 13.30  
Tolerance mm : ± 0.20

Pressure hPa : 370  
rack travel mm : 9.90  
Tolerance mm : ± 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 275

Check  
speed 1/min : > 80

Check  
speed 1/min : < 285

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 296.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.30  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.04.97  
Test oil : ISO 4113  
Combination No. : 0 402 746 626  
Injection pump  
Pump designation : PES6P120A72ORS7424  
EP type number : 0 412 726 964  
Governor  
Governor design. : RQV325...975PA944  
: K  
Governor no. : 0 421 815 540  
Cust. part No. : 313GC5223-P6

Customer-spec. information  
Customer : MACK  
Motor : E7-250A  
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
Overflow valve : 2 413 359 008  
Inlet press. bar : 2.8  
Tolerance bar : +- 0.1  
Test nozzle holde  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : +- 1.0  
Prestroke mm : 3.30  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10  
Rack travel in mm : 12.00  
Tolerance mm : +- 1.00  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.50

Start of delivery blocking  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.95  
Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.5



Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 340

Rack travel in mm : 4.90  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 40.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1031  
 guide sleeve  
 travel mm : 8.91  
 Tolerance mm : + 0.15

Rated speed rpm : 340  
 guide sleeve  
 travel mm : 2.25  
 Tolerance mm : + 0.20

Rated speed rpm : 882  
 guide sleeve  
 travel mm : 7.70  
 Tolerance mm : + 0.25

Rated speed rpm : 590  
 guide sleeve  
 travel mm : 4.37  
 Tolerance mm : + 0.25

Rated speed rpm : 1430

guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 270.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 111.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90  
 Rated speed rpm : 1020  
 Tolerance 1/min : + 5  
 Check  
 speed 1/min : + 10

rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min : + 15  
 Check  
 speed 1/min : + 20

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 63.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 340

rack travel mm : 4.90  
Tolerance mm : ± 0.10  
Rated speed rpm : 265  
CRT mm min. : > 6.50  
Rated speed rpm : 425

---

TORQUE CONTROL

Rated speed rpm : 975  
rack travel mm : 12.95  
Tolerance mm : ± 0.05  
Rated speed rpm : 600  
rack travel mm : 12.60  
Tolerance mm : ± 0.10  
Rated speed rpm : 500  
rack travel mm : 11.80  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 975  
Pressure hPa : 1200  
rack travel mm : 12.95  
Tolerance mm : ± 0.05  
Pressure hPa : -  
Rated speed rpm : 975  
rack travel mm : 9.05  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 975  
Pressure hPa : 590  
rack travel mm : 11.60  
Tolerance mm : ± 0.20  
Pressure hPa : 330  
rack travel mm : 9.75  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250  
Check speed 1/min : > 80

Check speed 1/min : < 255

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 303.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.0

---

LOW IDLE

Rated speed rpm : 340  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113  
  
Combination No. : 9 400 030 695  
  
Injection pump  
Pump designation : PES4A95D320/3RS2880  
EP type number : 9 410 037 214  
  
Governor  
Governor design. : RSV475...1250AOC825R  
Governor no. : 9 420 034 701  
  
Cust. part No. : 3928665

---

Customer-spec. information  
Customer : CDC  
Motor : 4BT3.9  
Power KW : 82.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 2.0  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : +- 1.0

Prestroke mm : 2.45  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10

Rack travel in mm : 10.50  
Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1250

---

Rack travel in mm : 12.55  
Tolerance mm : +- 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

Rated speed rpm : 475

Rack travel in mm : 5.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 1335  
Tolerance 1/min : ± 5

rack travel mm : 6.80  
Rated speed rpm : 1395  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1450

rack travel mm : 6.80  
Rated speed rpm : 1395

LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 27.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 475  
rack travel mm : 5.80  
Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

Rated speed rpm : 750

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 600  
rack travel mm : 12.30  
Tolerance mm : ± 0.20  
  
Pressure hPa : 460  
rack travel mm : 11.75  
Tolerance mm : ± 0.20

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.01.97  
Test oil : ISO 4113  
Combination No. : 9 400 030 721  
Injection pump  
Pump designation : PES6A95D320/3RS2895  
EP type number : 9 410 037 238  
Governor  
Governor design. : RSV475...1250A0C839R  
Governor no. :

Cust. part No. : 3929601

Customer-spec. information  
Customer : CDC  
Motor : 63TA  
Power kW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 2.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 9.00  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0  


---

 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  


---

 Rated speed rpm : 550  
 Rack travel in mm : 5.50  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : FREE  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : +- 0.20  
 governor spring  
 pre-tension  
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 107.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
 position degree : 108.0  
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.80  
 Rated speed rpm : 1340  
 Tolerance 1/min : +- 5  
 rack travel mm : 5.80  
 Rated speed rpm : 1385  
 Tolerance 1/min : +- 5

rack travel mm : 0.85  
 Tolerance mm : +- 0.55  
 Rated speed rpm : 1450

rack travel mm : 5.80  
 Rated speed rpm : 1385

LOW IDLE

control lever  
 position degree : 78.0  
 tolerance degree : +- 4.0

Control lever difference  
 Grad : 30.0  
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 550  
 rack travel mm : 5.00  
 Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 550  
 rack travel mm : 5.50  
 Tolerance mm : +- 0.10



Rated speed rpm : 100  
CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.70  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 480  
rack travel mm : 12.20  
Tolerance mm : + 0.20  
  
Pressure hPa : 350  
rack travel mm : 11.40  
Tolerance mm : + 0.20

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Anaroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50

F25

Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

LOW IDLE

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.04.97  
Test oil : ISO 4113

Combination No. : 9 400 030 737

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1100A0C850R  
Governor no. : 9 420 034 716

Cust. part No. : 3929409

Customer-spec. information

Customer : CDC  
Motor : 6BT  
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 86.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

Rated speed rpm	: 500
Rack travel in mm	: 5.40
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 18.5
Tolerance cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.5
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring pre-tension click setting x	: 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
-----------------	--------

Aneroid pressure hPa	: 900
Del. quantity cm <sup>3</sup> /1000 strokes	: 86.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 94.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 9.80
Rated speed rpm	: 1165
Tolerance 1/min	: + 5

rack travel mm	: 5.50
Rated speed rpm	: 1220
Tolerance 1/min	: + 5

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1300

rack travel mm	: 5.50
Rated speed rpm	: 1230

LOW IDLE

control lever position degree	: 80.0
tolerance degree	: + 4.0

Control lever difference Grad	: 14.0
tolerance degree	: + 6.0

Setting point w/out bumper spring

Rated speed rpm	: 500
rack travel mm	: 4.90
Tolerance mm	: + 0.10

Testing:

Rated speed rpm : 500  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1100  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.30

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.11.96  
Test oil : ISO 4113

Combination No. : 0 401 848 708

Injection pump  
Pump designation : PE8P110A320LS3802  
EP type number : 0 411 818 710

Governor  
Governor design. : RQ300/1150PA187-3  
Governor no. : 0 421 801 133

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM422  
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015  
Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
                  : - 4- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.75  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 114.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.5
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.0
<hr/>	

Rated speed rpm	: 300
Rack travel in mm	: 8.10
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 18.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 5.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1250
guide sleeve	
travel mm	: 9.80
Tolerance mm	: ± 0.50
<hr/>	
Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.20
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 650
guide sleeve	
travel mm	: 7.00
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1200

guide sleeve	
travel mm	: 7.50
Tolerance mm	: ± 0.20

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 650
<hr/>	
Rack travel in mm	: 13.50
Tolerance mm	: ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 750
Aneroid pressure	
hPa	: -
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 114.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.0

CONTROL LEVER

control lever	
position degree	: 43.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.70
Rated speed rpm	: 1203
Tolerance 1/min	: ± 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1255
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.75
Tolerance mm	: ± 0.75
Rated speed rpm	: 1350

LOW IDLE

control lever  
position degree : 18.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 8.10  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : ± 20

Rated speed rpm : 100

CRT mm min. : > 10.20

Rated speed rpm : 550

CRT mm max. : < 1.80

---

TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.97  
Test oil : ISO 4113

Combination No. : 0 402 046 875

Injection pump  
Pump designation : PES6P110A320RS3329Z  
EP type number : 0 412 016 744

Governor  
Governor design. : RQV325...1250PA1251  
Governor no. : 0 421 814 164

Cust. part No. : 1309376/0

---

Customer-spec. information  
Customer : DAF  
Motor : NS15GM  
Power KW : 156.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1000

---

Rack travel in mm : 11.85  
Tolerance mm : ± 0.05

---



Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 325

Rack travel in mm : 4.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1298  
guide sleeve  
travel mm : 10.25  
Tolerance mm : ± 0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.25  
Tolerance mm : ± 0.20

Rated speed rpm : 863  
guide sleeve  
travel mm : 5.41  
Tolerance mm : ± 0.25

Rated speed rpm : 520  
guide sleeve  
travel mm : 3.02

Tolerance mm : ± 0.25

Rated speed rpm : 1510  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1370

Rack travel in mm : 10.85  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
position degree : 123.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.85  
Rated speed rpm : 1300  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1375  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1500

---

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm : ± 0.10

Rated speed rpm : 225

CRT mm min. : > 6.00

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.85  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 11.85  
Tolerance mm : ± 0.10

Rated speed rpm : 1250  
rack travel mm : 11.85  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1500  
rack travel mm : 11.85  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 7.35  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 370

rack travel mm : 10.75  
Tolerance mm : ± 0.05

Pressure hPa : 200  
rack travel mm : 8.40  
Tolerance mm : ± 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump  
Pump designation : PE6P120A320RS7438  
EP type number : 0 412 626 965

Governor  
Governor design. : RQV275...1150PA1296K  
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information

Customer : DAF  
Motor : PF 235 M  
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 259.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1201  
guide sleeve  
travel mm : 10.07  
Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.71  
Tolerance mm : + 0.20

Rated speed rpm : 811  
guide sleeve  
travel mm : 6.79  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.85

Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1321

Rack travel in mm : 12.25  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 259.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.30

Rated speed rpm : 1215  
Tolerance 1/min : + 5

Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1340

Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

rack travel mm : 0.70  
Tolerance mm : + 0.70

Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.60

Rated speed rpm : 395

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Rated speed rpm : 1130  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 13.35  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 13.45  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 12.85  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 1150  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

G09

Rated speed rpm : 875  
Pressure hPa : 1500  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 875  
rack travel mm : 9.15  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 390  
rack travel mm : 12.20  
Tolerance mm : ± 0.05

Pressure hPa : 130  
rack travel mm : 10.10  
Tolerance mm : ± 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1130  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 646 671  
Injection pump  
Pump designation : PE6P120A320RS7421  
EP type number : 0 412 626 956  
Governor  
Governor design. : RQV275...1150PA1297K  
Governor no. : 0 421 815 524

Cust. part No. : 1316184/1

## Customer-spec. information

Customer : DAF  
Motor : PF 205 M  
Power KW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 160  
Tolerance L/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 4.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206  
guide sleeve  
travel mm : 10.12  
Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.71  
Tolerance mm : + 0.20

Rated speed rpm : 813  
guide sleeve  
travel mm : 6.81  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.85

Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1329

Rack travel in mm : 11.10  
Tolerance mm : + 2.70

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10  
Rated speed rpm : 1195  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1300  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1400



---

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.35  
Tolerance mm : + 0.05

Rated speed rpm : 1130  
rack travel mm : 12.10  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
rack travel mm : 12.15  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 12.25  
Tolerance mm : + 0.10

Rated speed rpm : 650  
rack travel mm : 11.50  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 10.85  
Tolerance mm : + 0.10

Rated speed rpm : 1150  
rack travel mm : 12.10  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

G13

Rated speed rpm : 875  
Pressure hPa : 1500  
rack travel mm : 12.35  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 875  
rack travel mm : 8.00  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 420  
rack travel mm : 11.35  
Tolerance mm : + 0.05

Pressure hPa : 150  
rack travel mm : 9.20  
Tolerance mm : + 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1130  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 207.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 646 672

Injection pump  
Pump designation : PE6P120A320RS7421  
EP type number : 0 412 626 956

Governor  
Governor design. : RQV275...1150PA1298K  
Governor no. : 0 421 815 525

Cust. part No. : 1316185/1

Customer-spec. information

Customer : DAF  
Motor : PF 183 M  
Power KW : 183.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 4.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200  
guide sleeve  
travel mm : 10.06  
Tolerance mm : ± 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.71  
Tolerance mm : ± 0.20

Rated speed rpm : 811  
guide sleeve  
travel mm : 6.79  
Tolerance mm : ± 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.85

Tolerance mm : ± 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1343

Rack travel in mm : 9.80  
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.80  
Rated speed rpm : 1190  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1285  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : +- 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.05  
Tolerance mm : +- 0.05

Rated speed rpm : 1130  
rack travel mm : 10.80  
Tolerance mm : +- 0.10

Rated speed rpm : 1000  
rack travel mm : 10.90  
Tolerance mm : +- 0.10

Rated speed rpm : 800  
rack travel mm : 10.90  
Tolerance mm : +- 0.10

Rated speed rpm : 650  
rack travel mm : 10.10  
Tolerance mm : +- 0.10

Rated speed rpm : 500  
rack travel mm : 9.35  
Tolerance mm : +- 0.10

Rated speed rpm : 1150  
rack travel mm : 10.80  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 875  
Pressure hPa : 1500  
rack travel mm : 11.10  
Tolerance mm : +- 0.10

Pressure hPa : -  
Rated speed rpm : 875  
rack travel mm : 8.00  
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 350  
rack travel mm : 10.20  
Tolerance mm : +- 0.05

Pressure hPa : 130  
rack travel mm : 8.40  
Tolerance mm : +- 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1130  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump  
Pump designation : PE6P120A320RS7412  
EP type number : 0 412 626 953

Governor  
Governor design. : RQV275...1000PA1300K  
Governor no. : 0 421 815 527

Cust. part No. : 1315099

## Customer-spec. information

Customer : DAF  
Motor : XF 250 M  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 3.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1072  
guide sleeve  
travel mm : 10.16  
Tolerance mm : ± 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.04  
Tolerance mm : ± 0.20

Rated speed rpm : 701  
guide sleeve  
travel mm : 6.52  
Tolerance mm : ± 0.25

Rated speed rpm : 400  
guide sleeve  
travel mm : 3.92

Tolerance mm : ± 0.25

Rated speed rpm : 1310  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1181

Rack travel in mm : 10.00  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1135  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1275



---

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 3.20  
Tolerance mm : +- 0.10

Rated speed rpm : 175

CRT mm min. : > 6.50

Rated speed rpm : 310

---

TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 11.40  
Tolerance mm : +- 0.05

Rated speed rpm : 980  
rack travel mm : 10.90  
Tolerance mm : +- 0.10

Rated speed rpm : 900  
rack travel mm : 11.10  
Tolerance mm : +- 0.10

Rated speed rpm : 700  
rack travel mm : 11.30  
Tolerance mm : +- 0.10

Rated speed rpm : 600  
rack travel mm : 10.80  
Tolerance mm : +- 0.10

Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm : +- 0.10

Rated speed rpm : 1000  
rack travel mm : 10.90  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

G21

Rated speed rpm : 775  
Pressure hPa : 1500  
rack travel mm : 11.35  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 775  
rack travel mm : 7.90  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : 460  
rack travel mm : 10.40  
Tolerance mm : +- 0.05

Pressure hPa : 250  
rack travel mm : 8.80  
Tolerance mm : +- 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 980  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +- 5.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +- 4.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.97  
Test oil : ISO 4113

Combination No. : 0 402 648 783

Injection pump  
Pump designation : PE8P120A320LS7906-1  
EP type number : 0 412 628 925

Governor  
Governor design. : RQ750PA1326  
Governor no. : 0 421 801 815

Cust. part No. : 04222 3938 KY

## Customer-spec. information

Customer : KHD  
Motor : BF8M1015/C  
Power KW : 318.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 200  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8-7-2-6-5  
                  : -3-1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 315.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.60  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 365.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 715  
guide sleeve  
travel mm : 4.23  
Tolerance mm : + 0.15

Rated speed rpm : 610  
guide sleeve  
travel mm : 0.72  
Tolerance mm : + 0.25

Rated speed rpm : 900  
guide sleeve  
travel mm : 14.89  
Tolerance mm : + 0.25

Rated speed rpm : 862

guide sleeve  
travel mm : 12.00  
Tolerance mm : + 0.25

Rated speed rpm : 930  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 365.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 112.0  
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 11.60

Rated speed rpm : 780  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

Rated speed rpm : 751  
rack travel mm : 11.60

Rated speed rpm : 781  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50

Rated speed rpm : 752  
rack travel mm : 11.60

Rated speed rpm : 782  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

Rated speed rpm : 753  
rack travel mm : 11.60

Rated speed rpm : 783  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50

Rated speed rpm : 754  
rack travel mm : 11.60

Rated speed rpm : 784  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

Rated speed rpm : 755  
rack travel mm : 11.60

Rated speed rpm : 785  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.60  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 560

Check speed 1/min : > 80  
Check speed 1/min : < 580

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance cm<sup>3</sup>/1000s. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000s. : + 6.0  
Speed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 678 837  
Injection pump  
Pump designation : PE8P120A320LS7911  
EP type number : 0 412 628 926  
Governor  
Governor design. : RSV550...1050POA679  
Governor no. : 0 421 833 598

Cust. part No. : 027 074 6502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442LA, Euro  
Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : + 0.1

Overflow quantity min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 4- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

Start of delivery mark  
Tolerance : + 0.10  
Check tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1080  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 550

Rack travel in mm : 4.10  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1080

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1111  
Tolerance 1/min : + 1

Rated speed rpm : 1144  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1113  
Tolerance 1/min : + 1

Rated speed rpm : 1146  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1115  
Tolerance 1/min : + 1

Rated speed rpm : 1148  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1117  
Tolerance 1/min : + 1

Rated speed rpm : 1150  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1119  
Tolerance 1/min : + 1

Rated speed rpm : 1152  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1154  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

---

#### LOW IDLE

##### Testing:

Rated speed rpm : 550  
rack travel mm : 4.10  
Tolerance mm : + 0.10

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 1080  
Tolerance mm : + 0.05

Rated speed rpm : 600  
Tolerance mm : + 0.10

Tolerance mm : + 0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.00  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 632

Injection pump  
Pump designation : PES6P120A720RS7366  
EP type number : 0 412 726 933

Governor  
Governor design. : RQ300/1050PA1340  
Governor no. : 0 421 801 820

Cust. part No. :

---

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41S.7031  
Power kW : 254.0

---

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

H01

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1050

---

Rack travel in mm : 12.95  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110  
guide sleeve  
travel mm : 6.85  
Tolerance mm : +- 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.97  
Tolerance mm : +- 0.20

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.50  
Tolerance mm : +- 0.10

Rated speed rpm : 697  
guide sleeve  
travel mm : 6.13

Tolerance mm : +- 0.10

Rated speed rpm : 399  
guide sleeve  
travel mm : 4.74  
Tolerance mm : +- 0.10

Rated speed rpm : 480  
guide sleeve  
travel mm : 6.00  
Tolerance mm : +- 0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm : +- 0.50

Rated speed rpm : 877  
guide sleeve  
travel mm : 6.38  
Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 1139

Rack travel in mm : 11.90  
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED  
rack travel mm : 11.90  
Rated speed rpm : 1103  
Tolerance 1/min : +- 8  
Check  
speed 1/min : +- 13  
rack travel mm : 4.00

Rated speed rpm : 1180  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20  
  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 386  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 8.15

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.95  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 700  
rack travel mm : 13.90  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 13.20  
Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

H03

Pressure hPa : 1200  
rack travel mm : 14.10  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.65  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 10.15  
Tolerance mm : + 0.20

Pressure hPa : 500  
rack travel mm : 12.40  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 331.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.65

Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 633

Injection pump  
Pump designation : PES6P120A72ORS7366  
EP type number : 0 412 726 933

Governor  
Governor design. : RQ300/1050PA1344  
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41R.7143  
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 160  
Tolerance L/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 500

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED  
rack travel mm : 10.50  
Rated speed rpm : 1103  
Tolerance 1/min : ± 8  
Check  
speed 1/min : ± 13

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 385  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.00

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.55  
Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 12.75  
Tolerance mm : +- 0.10  
  
Rated speed rpm : 700  
rack travel mm : 12.50  
Tolerance mm : +- 0.10  
  
Rated speed rpm : 875  
rack travel mm : 11.80  
Tolerance mm : +- 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 12.80  
Tolerance mm : +- 0.05  
  
Pressure hPa : --  
Rated speed rpm : 600  
rack travel mm : 9.60  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 600  
  
Pressure hPa : 260  
rack travel mm : 10.40  
Tolerance mm : +- 0.20  
  
Pressure hPa : 420  
rack travel mm : 12.00  
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250  
  
Check  
speed 1/min : > 80  
Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 7.0  
  
Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.60  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 846 061  
  
Injection pump  
Pump designation : PE6P120A32ORS8024-1  
EP type number : 0 412 826 029  
  
Governor  
Governor design. : RQV250...1100PA1072  
: 3K  
Governor no. : 0 421 815 979  
  
Cust. part No. : 477950-P05 v. 11.95

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD74 EU  
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 089  
  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 7.20  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100  
  
Rack travel in mm : 11.40  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0



Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 300

Rack travel in mm : 4.40  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176  
guide sleeve  
travel mm : 10.15  
Tolerance mm : + 0.25

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.33  
Tolerance mm : + 0.25

Rated speed rpm : 733  
guide sleeve  
travel mm : 5.39  
Tolerance mm : + 0.25

Rated speed rpm : 307  
guide sleeve  
travel mm : 2.29  
Tolerance mm : + 0.25

Rated speed rpm : 357  
guide sleeve  
travel mm : 2.97  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 3.22  
Tolerance mm : + 0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1290

Rack travel in mm : 7.50  
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 72.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.40  
Rated speed rpm : 1135  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1320

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

control lever  
position degree : 19.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.40  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.40  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 9.10  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
rack travel mm : 8.30  
Tolerance mm : ± 0.30

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 11.40  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 1100

rack travel mm : 7.20  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 580  
rack travel mm : 3.50  
Tolerance mm : ± 0.20

Pressure hPa : 120  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 846 062  
  
Injection pump  
Pump designation : PE6P120A320RS8024-1  
EP type number : 0 412 826 029  
  
Governor  
Governor design. : RQV250...1100PA1072  
: 4K  
Governor no. : 0 421 815 978  
  
Cust. part No. : 477951-P05 v. 11.95

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD74 EU  
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 089  
  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 7.60  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100  
  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 300

Rack travel in mm : 4.80  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176  
guide sleeve  
travel mm : 10.15  
Tolerance mm : +- 0.25

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.33  
Tolerance mm : +- 0.25

Rated speed rpm : 733  
guide sleeve  
travel mm : 5.39  
Tolerance mm : +- 0.25

Rated speed rpm : 307  
guide sleeve  
travel mm : 2.29  
Tolerance mm : +- 0.25

Rated speed rpm : 357  
guide sleeve  
travel mm : 2.97  
Tolerance mm : +- 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 3.22  
Tolerance mm : +- 0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 13.50  
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1290

Rack travel in mm : 7.50  
Tolerance mm : +- 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree : +- 4.0

control lever  
position degree : 119.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 1135  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1320

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

control lever  
position degree : 19.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.50  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 12.30  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
rack travel mm : 10.50  
Tolerance mm : ± 0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 12.50  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 1100

rack travel mm : 7.75  
Tolerance mm : ± 0.10

#### MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 750  
rack travel mm : 4.20  
Tolerance mm : ± 0.20

Pressure hPa : 200  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -

Rated speed rpm : 650

Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 846 063  
Injection pump  
Pump designation : PE6P120A320RS8024-1  
EP type number : 0 412 826 029  
Governor  
Governor design. : RQV250...1100PA1072  
: 5K  
Governor no. : 0 421 815 977  
Cust. part No. : 477952-P05 v. 11.95

---

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD74 EU  
Power KW : 210.0

---

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 089  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 7.60  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 13.60  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---



Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  


---

 Spread  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0  


---

Rated speed rpm : 300  
  
 Rack travel in mm : 4.80  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176  
 guide sleeve  
 travel mm : 10.15  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.33  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 733  
 guide sleeve  
 travel mm : 5.39  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 307  
 guide sleeve  
 travel mm : 2.29  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 357  
 guide sleeve  
 travel mm : 2.97  
 Tolerance mm : + 0.25

Rated speed rpm : 390  
 guide sleeve  
 travel mm : 3.22  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 1390  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1290  
  
 Rack travel in mm : 7.50  
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 211.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
 position degree : 68.0  
 tolerance degree : + 4.0  
  
 control lever  
 position degree : 120.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60  
 Rated speed rpm : 1135  
 Tolerance 1/min : + 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1230  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1320

---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

control lever  
position degree : 20.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 13.10  
Tolerance mm : + 0.10

Rated speed rpm : 300  
rack travel mm : 11.50  
Tolerance mm : + 0.30

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 13.60  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 1100

rack travel mm : 7.75  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 885  
rack travel mm : 5.50  
Tolerance mm : + 0.20

Pressure hPa : 190  
rack travel mm : 0.25  
Tolerance mm : + 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 650

Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 946 015  
Injection pump  
Pump designation : PES6P120A320RS8038  
EP type number : 0 412 926 025  
Governor  
Governor design. : RQV250...1000PA1239  
Governor no. : 0 421 814 157

Cust. part No. : 1383795

---

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 913

---

TEST BENCH REQUIREMENTS

Inlet line : EHAB  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 082  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Overflow quantity min. l/h : 105  
Tolerance l/h : ± 20.0  
Test nozzle holder assembly : 1 688 901 104  
Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

H2O

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50  
Start of delivery blocking  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 300.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 8.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

Rated speed rpm	: 250
Rack travel in mm	: 7.50
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 40.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance cm <sup>3</sup> /1000S.	: + 6.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1057
guide sleeve travel mm	: 7.89
Tolerance mm	: + 0.15
Rated speed rpm	: 250
guide sleeve travel mm	: 1.33
Tolerance mm	: + 0.20
Rated speed rpm	: 748
guide sleeve travel mm	: 6.17
Tolerance mm	: + 0.25
Rated speed rpm	: 322

guide sleeve travel mm	: 2.58
Tolerance mm	: + 0.25
Rated speed rpm	: 372
guide sleeve travel mm	: 3.27
Tolerance mm	: + 0.25
Rated speed rpm	: 470
guide sleeve travel mm	: 4.09
Tolerance mm	: + 0.25
Rated speed rpm	: 1470
guide sleeve travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1260
Rack travel in mm	: 11.40
Tolerance mm	: + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 300.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 8.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 57.0
tolerance degree	: + 4.0
control lever position degree	: 120.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 1045  
Tolerance 1/min : + 5  
Check speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min : + 15  
Check speed 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever position degree : 87.0  
tolerance degree : + 4.0

control lever position degree : 25.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 7.50  
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.80

Rated speed rpm : 300

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.70  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.70  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.80  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 380  
rack travel mm : 11.25  
Tolerance mm : + 0.15

Pressure hPa : 760  
rack travel mm : 12.15  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : < 170  
Rated speed rpm : > 100

Check speed 1/min : < 190  
Check speed 1/min : > 80

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance cm<sup>3</sup>/1000S. : + 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 016

Injection pump  
Pump designation : PES6P120A320RS8038  
EP type number : 0 412 923 025

Governor  
Governor design. : RQV250...1000PA1239  
: 1  
Governor no. : 0 421 814 158

Cust. part No. : 1369528

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 912

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.80  
Tolerance mm : ± 0.05



<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 292.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 9.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0
<hr/>	

Rated speed rpm	: 250
<hr/>	
Rack travel in mm	: 7.50
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 40.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 6.0
Speed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 8.0

(9) SETTING OF INJECTION PUMP WITH GOVERNOR

<hr/>	
GUIDE SLEEVE TRAVEL	
<hr/>	
Rated speed rpm	: 1057
guide sleeve	
travel mm	: 7.89
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 250
guide sleeve	
travel mm	: 1.33
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 748
guide sleeve	
travel mm	: 6.17
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 322

guide sleeve	
travel mm	: 2.58
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 372
guide sleeve	
travel mm	: 3.27
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 470
guide sleeve	
travel mm	: 4.09
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1470
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1290
<hr/>	
Rack travel in mm	: 11.30
Tolerance mm	: ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 292.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 9.0
Speed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 57.0
tolerance degree	: ± 4.0
<hr/>	
control lever	
position degree	: 120.0
tolerance degree	: ± 4.0

### RATED SPEED

rack travel mm : 11.80  
Rated speed rpm : 1045  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1225  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

### LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : + 4.0

control lever  
position degree : 25.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 7.50  
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.70

Rated speed rpm : 300

---

### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.80  
Tolerance mm : + 0.05

---

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.80  
Tolerance mm : + 0.20

### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 250  
rack travel mm : 11.30  
Tolerance mm : + 0.15

Pressure hPa : 620  
rack travel mm : 12.30  
Tolerance mm : + 0.05

### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 170

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 190

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 020

Injection pump  
Pump designation : PES6P120A32ORS8038  
EP type number : 0 412 926 025

Governor  
Governor design. : RQV250...1000PA1239  
: 2  
Governor no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 9.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 250

Rack travel in mm : 7.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057  
guide sleeve  
travel mm : 7.89  
Tolerance mm : ± 0.15

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.33  
Tolerance mm : ± 0.20

Rated speed rpm : 748  
guide sleeve  
travel mm : 6.17  
Tolerance mm : ± 0.25

Rated speed rpm : 470

guide sleeve  
travel mm : 4.09  
Tolerance mm : ± 0.25

Rated speed rpm : 1470  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1310

Rack travel in mm : 11.40  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 9.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.30  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1225  
Tolerance 1/min : ± 15

Check  
speed 1/min : + 20  
  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : + 4.0

control lever  
position degree : 24.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 7.20  
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.70

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.30  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.30  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.30  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.80  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 330  
rack travel mm : 11.20  
Tolerance mm : + 0.15

Pressure hPa : 600  
rack travel mm : 11.90  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : < 170  
Rated speed rpm : > 100

Check  
speed 1/min : < 190  
Check  
speed 1/min : > 80

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 272.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 7.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 021

Injection pump  
Pump designation : PES6P120A320RS8038  
EP type number : 0 412 926 025

Governor  
Governor design. : RQ250/1000PA1265  
Governor no. : 0 421 801 800

Cust. part No. : 1380278

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 9.12

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 5.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.80  
Tolerance mm : ± 0.05



Del. quantity cm <sup>3</sup> /1000 strokes	: 292.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 9.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

Rated speed rpm	: 250
Rack travel in mm	: 7.50
Tolerance mm	: ± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 40.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1062
guide sleeve travel mm	: 4.83
Tolerance mm	: ± 0.15
Rated speed rpm	: 250
guide sleeve travel mm	: 1.43
Tolerance mm	: ± 0.20
Rated speed rpm	: 970
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 377

guide sleeve travel mm	: 3.91
Tolerance mm	: ± 0.10
Rated speed rpm	: 490
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1135
guide sleeve travel mm	: 5.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1610
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 108
Rated speed rpm	: 600
Rack travel in mm	: 16.00
Tolerance mm	: ± 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 292.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 9.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 47.0
tolerance degree	: ± 4.0
control lever position degree	: 109.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm : 11.80  
Rated speed rpm : 1045  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : + 4.0

control lever  
position degree : 25.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 7.50  
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.00

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.80  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.80  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 11.30  
Tolerance mm : + 0.15

Pressure hPa : 620  
rack travel mm : 12.30  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 170

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 190

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 946 022  
Injection pump  
Pump designation : PES6P120A320RS8038  
EP type number : 0 412 926 025  
Governor  
Governor design. : RQ250/1000PA1265-1  
Governor no. : 0 421 801 801

Cust. part No. : 1380280

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 110  
Tolerance l/h : ± 20.0

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 277.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 8.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

Rated speed rpm	: 250
Rack travel in mm	: 7.30
Tolerance mm	: ± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 40.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1062
guide sleeve travel mm	: 4.83
Tolerance mm	: ± 0.15
Rated speed rpm	: 250
guide sleeve travel mm	: 1.43
Tolerance mm	: ± 0.20
Rated speed rpm	: 970
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 377

guide sleeve travel mm	: 3.91
Tolerance mm	: ± 0.10
Rated speed rpm	: 490
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1135
guide sleeve travel mm	: 5.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1610
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 108
Rated speed rpm	: 600
Rack travel in mm	: 16.00
Tolerance mm	: ± 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 277.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 8.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 38.0
tolerance degree	: ± 4.0
control lever position degree	: 109.0
tolerance degree	: ± 4.0

RATED SPEED  
 rack travel mm : 11.30  
 Rated speed rpm : 1045  
 Tolerance 1/min : +- 5  
 Check  
 speed 1/min : +- 10

rack travel mm : 4.00  
 Rated speed rpm : 1215  
 Tolerance 1/min : +- 15  
 Check  
 speed 1/min : +- 20

rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1350

---

LOW IDLE

control lever  
 position degree : 87.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 25.0  
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250  
 rack travel mm : 7.30  
 Tolerance mm : +- 0.10

rack travel mm : 2.00  
 Rated speed rpm : 350  
 Tolerance 1/min : +- 20

Rated speed rpm : 150

CRT mm min. : > 9.00

---

TORQUE CONTROL

Rated speed rpm : 600  
 rack travel mm : 12.30  
 Tolerance mm : +- 0.05

Rated speed rpm : 1000  
 rack travel mm : 12.30  
 Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
 Pressure hPa : 1500  
 rack travel mm : 12.30  
 Tolerance mm : +- 0.05

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 10.80  
 Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330  
 rack travel mm : 11.20  
 Tolerance mm : +- 0.15

Pressure hPa : 600  
 rack travel mm : 11.90  
 Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : < 170  
 Rated speed rpm : > 100

Check  
 speed 1/min : < 190  
 Check  
 speed 1/min : > 80

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 272.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 8.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 210.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 023

Injection pump  
Pump designation : PES6P120A320RS8038  
EP type number : 0 412 926 025

Governor  
Governor design. : RQ250/1000PA1265-2  
Governor no. : 0 421 801 808

Cust. part No. : 1385102

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 9.15

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70



Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  9.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 250

Rack travel in mm : 7.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055  
guide sleeve  
travel mm : 4.82  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.48  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 970  
guide sleeve  
travel mm : 4.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 358

guide sleeve  
travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 490  
guide sleeve  
travel mm : 4.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1129  
guide sleeve  
travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1600  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

GUIDE SLEEVE POSITION

control lever  
position degree : 108  
Rated speed rpm : 600

Rack travel in mm : 16.00  
Tolerance mm :  $\pm$  1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  9.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 47.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 109.0  
tolerance degree :  $\pm$  4.0

RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 1045  
Tolerance 1/min : +- 5  
Check  
speed 1/min : +- 10

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min : +- 15  
Check  
speed 1/min : +- 20

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1350

LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : +- 4.0

control lever  
position degree : 25.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 7.50  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min : +- 20

Rated speed rpm : 150

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : +- 0.05

Rated speed rpm : 1000  
rack travel mm : 12.70  
Tolerance mm : +- 0.05

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.70  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.90  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330  
rack travel mm : 10.65  
Tolerance mm : +- 0.15

Pressure hPa : 710  
rack travel mm : 11.95  
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : < 170  
Rated speed rpm : > 100

Check  
speed 1/min : < 190  
Check  
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm3/1000 strokes : 290.0  
Tolerance  
cm3/1000 strokes : +- 4.0  
Check tolerance  
cm3/1000S. : +- 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 172.0  
Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 946 025  
Injection pump  
Pump designation : PES6P120A32ORS8038  
EP type number : 0 412 926 025  
Governor  
Governor design. : RQV250...1000PA1239  
: 3  
Governor no. : 0 421 814 178  
Cust. part No. : 1383494

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 915

TEST BENCH REQUIREMENTS

Inlet line : EHAB  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2 417 413 082  
Inlet press. bar : 2.5  
Tolerance bar : + 0.1  
Overflow quantity  
min. L/h : 100  
Tolerance L/h : + 20.0  
Test nozzle holder  
assembly : 1 688 901 104  
Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 20.50  
Tolerance mm : + 0.20  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50  
Start of delivery blocking  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 12.70  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057  
guide sleeve  
travel mm : 7.89  
Tolerance mm : ± 0.15

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.33  
Tolerance mm : ± 0.20

Rated speed rpm : 748  
guide sleeve  
travel mm : 6.17  
Tolerance mm : ± 0.25

Rated speed rpm : 470

guide sleeve  
travel mm : 4.09  
Tolerance mm : ± 0.25

Rated speed rpm : 1470  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1265

Rack travel in mm : 11.40  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 57.0  
tolerance degree : ± 4.0

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 1045

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min : ± 15

Check  
speed 1/min : +- 20  
  
rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : +- 4.0

control lever  
position degree : 25.0  
tolerance degree : +- 4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 7.50  
Tolerance mm : +- 0.10

Rated speed rpm : 150

CRT mm min. : > 9.80

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : +- 0.05

Rated speed rpm : 1000  
rack travel mm : 12.70  
Tolerance mm : +- 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.70  
Tolerance mm : +- 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.90  
Tolerance mm : +- 0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330  
rack travel mm : 10.85  
Tolerance mm : +- 0.15

Pressure hPa : 710  
rack travel mm : 11.95  
Tolerance mm : +- 0.05

#### Start interlock

Rated speed rpm : < 170  
Rated speed rpm : > 100

Check  
speed 1/min : < 190  
Check  
speed 1/min : > 80

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : +- 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.97  
Test oil : ISO 4113  
Combination No. : 0 403 444 151

Injection pump  
Pump designation : PES4MW100/720RS1235  
EP type number : 0 413 404 121

Governor  
Governor design. : RQV300...1300MW139  
Governor no. : 0 420 083 304

Cust. part No. : 0250742602

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364A  
Power KW : 79.0

---

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.00  
Tolerance mm : ± 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1300

---

Rack travel in mm : 12.90  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5



Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 8.15  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354  
guide sleeve  
travel mm : 10.31  
Tolerance mm : + 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.27  
Tolerance mm : + 0.25

Rated speed rpm : 894  
guide sleeve  
travel mm : 6.18  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.01  
Tolerance mm : + 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.56  
Tolerance mm : + 0.25

Rated speed rpm : 1600

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1430

Rack travel in mm : 10.00  
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.90  
Rated speed rpm : 1345  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1455  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1550

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 8.15  
Tolerance mm : +- 0.10

Rated speed rpm : 200  
CRT mm min. : > 9.50

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.90  
Tolerance mm : +- 0.05

Rated speed rpm : 600  
rack travel mm : 13.40  
Tolerance mm : +- 0.10

Rated speed rpm : 1150  
rack travel mm : 13.20  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.40  
Tolerance mm : +- 0.10

Pressure hPa : -  
Rated speed rpm : 500  
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 230  
rack travel mm : 0.90  
Tolerance mm : +- 0.10

Pressure hPa : 150  
rack travel mm : 0.40  
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 200

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 230

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 8.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.97  
Test oil : ISO 4113

Combination No. : 0 403 476 149

Injection pump  
Pump designation : PES6MW100/72ORS1131  
EP type number : 0 413 406 123

Governor  
Governor design. : RSV350...900MWDA406  
Governor no. : 0 420 085 295

Cust. part No. : 0270741502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly : 1 688 901 101

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 11.60  
Tolerance mm : ± 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 89.0

Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 350

Rack travel in mm : 6.10  
 Tolerance mm : + 0.25

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 4.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 380  
 Aneroid pressure  
 hPa : 800

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 89.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
 position degree : 92.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.60  
 Rated speed rpm : 933  
 Tolerance 1/min : + 3

rack travel mm : 4.00  
 Rated speed rpm : 1000  
 Tolerance 1/min : + 5

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1100

---

LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 6.10  
 Tolerance mm : + 0.25

rack travel mm : 2.00  
 Rated speed rpm : 410  
 Tolerance 1/min : + 30

Rated speed rpm : 100  
 CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 880  
 rack travel mm : 11.60  
 Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 500  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 375  
rack travel mm : 1.10  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 275  
rack travel mm : 0.60  
Tolerance mm :  $\pm$  0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 074 903  
  
Injection pump  
Pump designation : PES4M55C320RS169  
EP type number : 0 410 054 959  
  
Governor  
Governor design. : RSF360/2300M60-9  
Governor no. : 0 420 021 109

Cust. part No. :

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM601-ECE  
Power KW : 53.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 469 990 351  
  
Inlet press. bar : 1.0  
  
Test nozzle holder  
assembly : 1 688 901 111  
  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 21.00  
Tolerance mm : ± 1.00  
  
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

\*NW after s.o.d. : 19.50  
Tolerance : ± 0.20  
Check  
tolerance \*NW : ± 0.30  
  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1000  
  
Rack travel in mm : 12.35  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.5  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Rated speed rpm : 335

Rack travel in mm : 6.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 6.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever  
position degree : 50.0

Rated speed rpm : 2500  
rack travel mm : 8.70  
Tolerance mm : ± 0.20

Rated speed rpm : 2950  
rack travel mm : 0.50  
Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000  
CRT mm max. : < 1.25

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 2.0

Setting point w/out bumper spring  
Rated speed rpm : 335  
rack travel mm : 6.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 660  
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 225  
rack travel mm : > 9.00

Rated speed rpm : 1000  
CRT mm max. : < 1.25

rack travel mm : 6.40  
Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1800  
rack travel mm : 11.80  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA



SETTING

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 950  
 rack travel mm : -0.10  
 Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 900  
 rack travel mm : -0.60  
 Tolerance mm : +- 0.10

Ref. pressure  
 ALDA / ADA hPa : 750  
 rack travel mm : -2.00  
 Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
 ALDA / ADA hPa : 1100  
 Rated speed rpm : 1800  
 Del. quantity  
 cm3/1000 strokes : 33.8  
 Tolerance  
 cm3/1000 strokes : +- 0.8  
 Check tolerance  
 cm3/1000S. : +- 1.8  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 2.5  
 Check tolerance  
 cm3/1000S. : 3.0

Ref. pressure  
 ALDA / ADA hPa : 1100  
 Rated speed rpm : 2200  
 Spreed  
 Del. quantity  
 cm3/1000 strokes : 35.0  
 Tolerance  
 cm3/1000 strokes : +- 1.0  
 Check tolerance  
 cm3/1000S. : +- 2.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 2.5  
 Check tolerance  
 cm3/1000S. : 3.0

HIGH IDLE

K01

Ref. pressure  
 ALDA / ADA hPa : 1100  
 Rated speed rpm : 2500  
 rack travel mm : 8.70  
 Tolerance mm : +- 0.20  
 Del. quantity  
 cm3/1000 strokes : 24.0  
 Tolerance  
 cm3/1000 strokes : +- 2.0  
 Check tolerance  
 cm3/1000S. : +- 3.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 2.5  
 Check tolerance  
 cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 21.50  
 Tolerance mm : +- 1.50  
 Del. quantity  
 cm3/1000 strokes : 52.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 335  
 Del. quantity  
 cm3/1000 strokes : 7.8  
 Check tolerance  
 cm3/1000S. : +- 2.3  
 Spreed  
 Check tolerance  
 cm3/1000S. : 1.5

control lever  
 position degree : > 49.00

control lever  
 position degree : < 46.50

SETTING PNEUMATIC FAST IDLE (PLA)  
(PLA) POSITION

control lever  
position degree : 14.0  
tolerance degree : ± 2.0

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

Rated speed rpm : 360

Rack travel in mm : 13.00

Tolerance mm : ± 0.70

Del. quantity

cm<sup>3</sup>/1000 strokes : 34.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.5

Current A : 1.80

Rated speed rpm : 2950

Rack travel in mm : 0.50

Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

---

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 335

Vacuum hPa : -450.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113

Combination No. : 0 401 876 211

Injection pump  
Pump designation : PE6P110A320RS350  
EP type number : 0 411 816 109

Governor  
Governor design. : RSV300...1100P1/816D  
: R  
Governor no. : 0 421 835 083

Cust. part No. :

---

Customer-spec. information  
Customer : RENAULT V.I.  
Motor : MDS 063540  
Power kW : 205.9

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.35  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 3

---

## BASIC SETTING

Rated speed rpm : 1100

---

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5

---

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 300

Rack travel in mm : 6.40  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 167.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1215  
 Tolerance 1/min : + 15

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 30.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300  
 rack travel mm : 6.90  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.40  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 530  
 Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 12.75  
 Tolerance mm : + 0.05

Rated speed rpm : 1000  
 rack travel mm : 13.00  
 Tolerance mm : + 0.10

Rated speed rpm : 700  
rack travel mm : 13.60  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.60  
Tolerance mm : +- 0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.75  
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 220  
rack travel mm : 11.55  
Tolerance mm : +- 0.15

Pressure hPa : 380  
rack travel mm : 12.85  
Tolerance mm : +- 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : +- 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.03.97  
Test oil : ISO 4113

Combination No. : 0 402 646 626

Injection pump  
Pump designation : PE6P120A320RS7299  
EP type number : 0 412 626 885

Governor  
Governor design. : RQV275...1000PA1076K  
Governor no. : 0 421 815 357

Cust. part No. : 1280160

Customer-spec. information  
Customer : DAF  
Motor : WS 268 M  
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 4.80  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045  
 guide sleeve  
 travel mm : 9.82  
 Tolerance mm : + 0.20

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 2.14  
 Tolerance mm : + 0.15

Rated speed rpm : 689  
 guide sleeve  
 travel mm : 6.43  
 Tolerance mm : + 0.25

Rated speed rpm : 284  
 guide sleeve  
 travel mm : 2.27  
 Tolerance mm : + 0.25

Rated speed rpm : 334

guide sleeve  
 travel mm : 3.17  
 Tolerance mm : + 0.25

Rated speed rpm : 390  
 guide sleeve  
 travel mm : 3.79  
 Tolerance mm : + 0.25

Rated speed rpm : 1310  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1130

Rack travel in mm : 12.60  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 120.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.55  
 Rated speed rpm : 1042  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1275

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 275

---

TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 13.55  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 13.05  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 11.70  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 980  
Pressure hPa : 1500  
rack travel mm : 13.55  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 980  
rack travel mm : 8.60

Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 720  
rack travel mm : 12.25  
Tolerance mm : ± 0.05

Pressure hPa : 360  
rack travel mm : 9.80  
Tolerance mm : ± 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113

Combination No. : 0 402 648 701

Injection pump  
Pump designation : PE8P120A320LS7906  
EP type number : 0 412 628 921

Governor  
Governor design. : RQ300/1050PA1341  
Governor no. : 0 421 801 819

Cust. part No. : 04222 3944 KY

Customer-spec. information

Customer : KHD  
Motor : BF8M1015/C  
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 220  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 5  
                  : - 3- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 315.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00  
 Tolerance mm : + 0.05  


---

 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 350.0  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  


---

 Spreed  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

Rated speed rpm : 300  
 Rack travel in mm : 5.00  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108  
 guide sleeve  
 travel mm : 6.53  
 Tolerance mm : + 0.15  
  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.60  
 Tolerance mm : + 0.20  
  
 Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 434  
 guide sleeve  
 travel mm : 3.65  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 590  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 1290  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : 90  
 Rated speed rpm : 700  
  
 Rack travel in mm : 12.20  
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Arteroid pressure  
 hPa : 1700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 350.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00  
 Rated speed rpm : 1100  
 Tolerance 1/min : + 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1200

Tolerance 1/min : + 15  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200  
CRT mm min. : > 6.50

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.00  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1700  
rack travel mm : 14.00  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.75  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 400  
Pressure hPa : 570  
rack travel mm : 10.50

Tolerance mm : + 0.20  
Pressure hPa : 1100  
rack travel mm : 13.00  
Tolerance mm : + 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.75  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113

Combination No. : 0 402 648 945

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886

Governor  
Governor design. : RQ300/1050PA1030-16  
Governor no. : 0 421 801 738

Cust. part No. : 0230747802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

K13

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 4- 1

Phasing : 0-45-90-135-180  
: -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40

Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.65  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.79  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.30  
Tolerance mm : + 0.10

Rated speed rpm : 792

guide sleeve  
travel mm : 6.08  
Tolerance mm : + 0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 3.88  
Tolerance mm : + 0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 847  
guide sleeve  
travel mm : 6.23  
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 99.0  
tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 13.00  
 Rated speed rpm : 1098  
 Tolerance 1/min : ± 8  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min : ± 15  
  
 rack travel mm : 0.70  
 Tolerance mm : ± 0.70  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 5.50  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 405  
 Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.10

TORQUE CONTROL

Rated speed rpm : 550  
 rack travel mm : 14.40  
 Tolerance mm : ± 0.05

Rated speed rpm : 1050  
 rack travel mm : 14.05  
 Tolerance mm : ± 0.10

Rated speed rpm : 950  
 rack travel mm : 14.20  
 Tolerance mm : ± 0.10

Rated speed rpm : 800  
 rack travel mm : 14.40  
 Tolerance mm : ± 0.05

Rated speed rpm : 400  
 rack travel mm : 12.90  
 Tolerance mm : ± 0.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
 Pressure hPa : 1200  
 rack travel mm : 14.40  
 Tolerance mm : ± 0.05

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.40  
 Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 450  
 rack travel mm : 12.90  
 Tolerance mm : ± 0.20

Pressure hPa : 300  
 rack travel mm : 11.90  
 Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : > 220

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 212.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : 450

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.03.97  
Test oil : ISO 4113

Combination No. : 0 402 670 810

Injection pump  
Pump designation : PE12P120A520/5RS7375  
EP type number : 0 412 620 844

Governor  
Governor design. : RSUV300...900POA361  
Governor no. : 0 421 829 110

Cust. part No. : 1 2277 426

Customer-spec. information

Customer : MWM  
Motor : TBD 616-V12  
Power KW : 648.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2/3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 2- 9-10- 5- 6  
: 11- 12- 3- 4- 7  
: 8

Phasing : 0-30-60-90-120-150  
: 180-210-240-270-300  
: 330

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm :	13.30
Tolerance mm :	+ 0.05

---

Del. quantity cm <sup>3</sup> /1000 strokes :	325.0
--	-------

---

Tolerance cm <sup>3</sup> /1000 strokes :	+ 1.0
--	-------

---

Check tolerance cm <sup>3</sup> /1000S. :	+ 4.0
--	-------

---

Spreed	
--------	--

---

Tolerance cm <sup>3</sup> /1000 strokes :	6.0
--	-----

---

Check tolerance cm <sup>3</sup> /1000S. :	9.0
--	-----

---

Rated speed rpm :	325
-------------------	-----

Rack travel in mm :	4.90
Tolerance mm :	+ 0.10

Del. quantity cm <sup>3</sup> /1000 strokes :	30.0
--	------

Tolerance cm <sup>3</sup> /1000 strokes :	+ 3.0
--	-------

Check tolerance cm <sup>3</sup> /1000S. :	+ 6.0
--	-------

Spreed	
--------	--

Tolerance cm <sup>3</sup> /1000 strokes :	8.0
--	-----

Check tolerance cm <sup>3</sup> /1000S. :	12.0
--	------

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever position degree :	- 3
Rated speed rpm :	800

Rack travel in mm :	0.50
Tolerance mm :	+ 0.20

governor spring pre-tension click setting x :	3.25
---	------

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	700
-------------------	-----

Aneroid pressure hPa :	-
---------------------------	---

Del. quantity cm <sup>3</sup> /1000 strokes :	325.0
--	-------

Tolerance cm <sup>3</sup> /1000 strokes :	+ 1.0
--	-------

Check tolerance cm <sup>3</sup> /1000S. :	+ 4.0
--	-------

Spreed	
--------	--

Tolerance cm <sup>3</sup> /1000 strokes :	6.0
--	-----

Check tolerance cm <sup>3</sup> /1000S. :	9.0
--	-----

---

CONTROL LEVER

control lever position degree :	105.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	1.00
Tolerance mm :	+ 0.70
Rated speed rpm :	950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	750
rack travel mm :	12.30

Rated speed rpm :	784
Tolerance 1/min :	+ 4
rack travel mm :	4.00

rack travel mm :	1.00
Tolerance mm :	+ 0.70

Rated speed rpm :	751
rack travel mm :	12.30

Rated speed rpm :	785
Tolerance 1/min :	+ 4
rack travel mm :	4.00

rack travel mm :	1.00
Tolerance mm :	+ 0.70

Rated speed rpm :	752
rack travel mm :	12.30

Rated speed rpm : 786  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 753  
rack travel mm : 12.30

Rated speed rpm : 787  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 754  
rack travel mm : 12.30

Rated speed rpm : 788  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 755  
rack travel mm : 12.30

Rated speed rpm : 789  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70

---

#### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm : + 0.05

#### Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 986

Injection pump  
Pump designation : PES6P120A72ORS7224  
EP type number : 0 412 726 893

Governor  
Governor design. : RQ275/1050PA1021-3  
Governor no. : 0 421 801 677

Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8460.41.731

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALVES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED  
rack travel mm : 11.60  
Rated speed rpm : 1103  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 355  
Tolerance 1/min : ± 20

Rated speed rpm : 100

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.65  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.70  
Tolerance mm :  $\pm 0.20$

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 290  
rack travel mm : 8.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 580  
rack travel mm : 11.35  
Tolerance mm :  $\pm 0.05$

Start interlock

Rated speed rpm :  $> 100$   
Rated speed rpm :  $< 195$

Check  
speed 1/min :  $> 80$   
Check  
speed 1/min :  $< 215$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 4.0$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 7.0$

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 4.0$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 15.0$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 19.0$

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 6.0$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 746 992  
Injection pump  
Pump designation : PES6P120A72ORS7340  
EP type number : 0 412 726 912  
Governor  
Governor design. : RQ300...1100PA1156  
Governor no. : 0 421 801 726

Cust. part No. :

Customer-spec. information  
Customer : RABA  
Motor : TLL235  
Power KW : 235.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 15.00  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 300  
Rack travel in mm : 5.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159  
 guide sleeve  
 travel mm : 6.37  
 Tolerance mm : ± 0.10

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.30  
 Tolerance mm : ± 0.10

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 384  
 guide sleeve  
 travel mm : 4.57  
 Tolerance mm : ± 0.10

Rated speed rpm : 470  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 500

Rack travel in mm : 20.00  
 Tolerance mm : ± 0.80

CONTROL LEVER

control lever  
 position degree : 35.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 96.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.50  
 Rated speed rpm : 1152  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1400

LOW IDLE

control lever  
 position degree : 75.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 13.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 5.90  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 385  
 Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.60

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 13.50  
 Tolerance mm : ± 0.05



---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.05  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 210  
rack travel mm : 11.70  
Tolerance mm : ± 0.20

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : < 100  
Rated speed rpm : > 220

Check  
speed 1/min : < 80  
Check  
speed 1/min : > 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.03.97  
Test oil : ISO 4113  
Combination No. : 0 403 466 179  
Injection pump  
Pump designation : PES6MW100/720/3RS120  
: 5-1  
EP type number : 0 413 406 245  
Governor  
Governor design. : RSV675...1250MWOA403  
Governor no. : 0 420 085 296  
Cust. part No. : 0280742102

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 366 LA  
Power kW : 174.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1230  
Rack travel in mm : 13.70  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0  
Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 675

Rack travel in mm : 5.50  
 Tolerance mm : + 0.30

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 1.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1230  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 106.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
 position degree : 92.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1400

rack travel mm : 4.00  
 Rated speed rpm : 1305

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1270  
 rack travel mm : 12.70

Rated speed rpm : 1299  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 1271  
 rack travel mm : 12.70

Rated speed rpm : 1300  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 1272  
 rack travel mm : 12.70

Rated speed rpm : 1301  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 1273  
 rack travel mm : 12.70

Rated speed rpm : 1302  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 1278  
 rack travel mm : 12.70

Rated speed rpm : 1307  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 1279  
rack travel mm : 12.70

Rated speed rpm : 1308  
Tolerance 1/min : + 4  
rack travel mm : 4.00

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 675  
rack travel mm : 5.50  
Tolerance mm : + 0.30

rack travel mm : 2.00  
Rated speed rpm : 690  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

TORQUE CONTROL

Rated speed rpm : 1230  
rack travel mm : 13.70  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 13.70  
Tolerance mm : + 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 8.0

---

LOW IDLE

Rated speed rpm : 675  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.06.96  
Test oil : ISO 4113

Combination No. : 0 402 046 867

Injection pump  
Fuel designation : PES6P120A72ORS3345  
EP type number : 0 412 026 779

Governor  
Governor design. : RQ300/1025PAT214  
Governor no. : 0 421 801 784

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8360.46.4669  
Power KW : 196.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 175  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 12.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  


---

 Spread  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

  
 Rated speed rpm : 300  
  
 Rack travel in mm : 5.00  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 22.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : 97  
 Rated speed rpm : 550  
  
 Rack travel in mm : 14.30  
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 194.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

L02

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
  
 RATED SPEED  
 rack travel mm : 11.85  
 Rated speed rpm : 1085  
 Tolerance 1/min : +- 8  
 Check  
 speed 1/min : +- 13  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : +- 15  
 Check  
 speed 1/min : +- 20  
  
 rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1250  
  
 rack travel mm : 4.00

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 5.00  
 Tolerance mm : +- 0.10  
  
 rack travel mm : 2.00  
 Rated speed rpm : 360  
 Tolerance 1/min : +- 20  
  
 Rated speed rpm : 200  
  
 CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 1025  
 rack travel mm : 12.85  
 Tolerance mm : +- 0.05  
  
 Rated speed rpm : 500  
 rack travel mm : 12.90  
 Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 12.85  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.00  
Tolerance ma : ± 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 11.70  
Tolerance mm : ± 0.20

Pressure hPa : 450  
rack travel mm : 10.90  
Tolerance mm : ± 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.00  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.04.97  
Test oil : ISO 4113

Combination No. : 0 402 746 647

Injection pump  
Pump designation : PES6P120A720RS7366  
EF type number : 0 412 726 933

Governor  
Governor design. : RQV275...1100PA1208K  
Governor no. : 0 421 815 459

Cust. part No. :

---

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41.4000

---

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

---

## BASIC SETTING

Rated speed rpm : 1100

---

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 284.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---



Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

 Rated speed rpm : 275  
 Rack travel in mm : 6.70  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155  
 guide sleeve  
 travel mm : 9.75  
 Tolerance mm : + 0.15  
 Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.70  
 Tolerance mm : + 0.20  
 Rated speed rpm : 790  
 guide sleeve  
 travel mm : 6.42  
 Tolerance mm : + 0.25  
 Rated speed rpm : 460  
 guide sleeve  
 travel mm : 3.77  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1440  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 284.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 117.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5  
 Check  
 speed 1/min : + 10

rack travel mm : 4.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : + 15  
 Check  
 speed 1/min : + 20

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 275  
 rack travel mm : 6.70  
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.20

Rated speed rpm : 335

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.75  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 13.40  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 13.50  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 800  
Pressure hPa : 1200  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Pressure hPa : -  
Rated speed rpm : 800  
rack travel mm : 9.40  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 800  
Pressure hPa : 290  
rack travel mm : 10.60  
Tolerance mm : ± 0.20

Pressure hPa : 520  
rack travel mm : 12.50  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 170  
Rated speed rpm : < 220

Check speed 1/min : > 150  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200

Rated speed rpm : 650  
Del. quantity cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure hPa : 1200  
Rated speed rpm : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure hPa : -  
Rated speed rpm : 650  
Del. quantity cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.00  
Tolerance mm : ± 0.30  
Del. quantity cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 6.0  
Speed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 984

Injection pump  
Pump designation : PES6P120A320RS7324  
EP type number : 0 412 726 905

Governor  
Governor design. : RQV300...1200PA1131  
Governor no. : 0 421 814 088

Cust. part No. : 51.11103-7330

Customer-spec. information  
Customer : MAN  
Motor : D0826LF11/LFL03  
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 175  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 300

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1263  
guide sleeve  
travel mm : 10.49  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.69  
Tolerance mm : ± 0.25

Rated speed rpm : 806  
guide sleeve  
travel mm : 5.85  
Tolerance mm : ± 0.25

Rated speed rpm : 347  
guide sleeve  
travel mm : 2.36

Tolerance mm : ± 0.25

Rated speed rpm : 397  
guide sleeve  
travel mm : 3.01  
Tolerance mm : ± 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.37  
Tolerance mm : ± 0.25

Rated speed rpm : 1470  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1320

Rack travel in mm : 11.45  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 123.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.45  
Rated speed rpm : 1245  
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1340  
Tolerance 1/min : + 15  
  
rack travel mm : 0.25  
Tolerance mm : + 0.25  
Rated speed rpm : 1500

---

#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.40  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 12.45  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.45  
Tolerance mm : + 0.10

Rated speed rpm : 750  
rack travel mm : 12.45  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.45  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 140  
rack travel mm : 8.95  
Tolerance mm : + 0.05

Pressure hPa : 700  
rack travel mm : 11.85  
Tolerance mm : + 0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 240

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.04.97  
Test oil : ISO 4113  
Combination No. : 0 402 890 300

Injection pump  
Pump designation : PE12P12QA520LS8524  
EP type number : 0 421 820 202

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 036

Cust. part No. : 51.11103-7575

Customer-spec. information  
Customer : MAN  
Motor : D 2842 LF 03  
Power KW : 559.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2 417 413 078  
Inlet press. bar : 3.0  
Tolerance bar : + 0.1  
Test nozzle holder assembly : 1 688 901 105  
Opening pressure bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 6.40  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10  
Rack travel in mm : 13.00  
Tolerance mm : + 0.50  
Firing order : 12- 1- 5- 9- 8  
                  : - 4- 11- 10- 2  
                  : - 7  
Phasing : 0-45-60-105-120  
          : -180-225-240-285  
          : -345  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75  
Start of delivery blocking  
Tolerance : + 0.10  
Check tolerance °NW : + 0.75  
Barrel no. : 12

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V



TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
 CRT mm : 13.00  
 Tolerance mm : +/- 0.05  
 Check tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
 CRT mm : 6.15  
 Tolerance mm : +/- 0.25  
 Check tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
 CRT mm : 12.50  
 Tolerance mm : +/- 0.05  
 Check tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
 CRT mm : 5.50  
 Tolerance mm : +/- 0.25  
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
 deenergised adjusting magnet  
 and control rod in  
 stop position.

CRT mm : 0.75  
 Tolerance mm : +/- 0.25  
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(ALL P and R pumps not  
 H and M pumps)

Test with control rod  
 in stop position

Engine speed min-1: 60  
 Amplitude V : 1.4  
 Tolerance V : +/- 0.6  
 Check tolerance V : +/- 1.20

Engine speed min-1: 600  
 Difference  
 Amplitude to  
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1150  
 Uact V : 3.100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 310.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +/- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +/- 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500  
 Uact V : 1.900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 177.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +/- 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +/- 9.0

TEST POINT L1

Rated speed rpm : 300  
 Uact V : 1.340  
 Tolerance Volt : +/- 0.060  
 Check tolerance  
 Volt : +/- 0.080  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 25.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +/- 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 026

Injection pump  
Pump designation : PES6P120A72ORS8045  
EP type number : 0 412 926 028

Governor  
Governor design. : RQV350...1100PA1305K  
Governor no. : 0 421 815 967

Cust. part No. : 1388631

Customer-spec. information  
Customer : SCANIA  
Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 80  
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50

Start of delivery blocking  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75

Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 4.10  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1165  
guide sleeve  
travel mm : 10.15  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.00  
Tolerance mm : + 0.20

Rated speed rpm : 755  
guide sleeve  
travel mm : 6.14  
Tolerance mm : + 0.25

Rated speed rpm : 460

guide sleeve  
travel mm : 4.07  
Tolerance mm : + 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1250

Rack travel in mm : 10.70  
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 64.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min : + 15

Check  
speed 1/min : + 20  
  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

control lever  
position degree : 17.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.10  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 275

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 10.65  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 11.75  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 7.10  
Tolerance mm : + 0.20

---

#### MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340  
rack travel mm : 8.35  
Tolerance mm : + 0.25

Pressure hPa : 800  
rack travel mm : 10.65  
Tolerance mm : + 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 7.10  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 350

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.04.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 434  
Injection pump  
Pump designation : PES6A95D410RS2864  
EP type number : 0 410 896 888  
Governor  
Governor design. : RSV400...1050A8C2263  
                  : -11L  
Governor no. : 0 420 232 635  
Cust. part No. : 87 800 972

---

Customer-spec. information  
Customer : NH  
Motor : P 396  
Power KW : 176.0

---

TEST BENCH REQUIREMENTS

Inlet line : 1.3  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0  
Prestroke mm : 2.60  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10  
Rack travel in mm : 10.50  
Tolerance mm : +- 1.50  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
Phasing : 0-60-120-180-240  
Start of delivery mark  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 13.70  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.75

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

CONTROL LEVER

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1095  
rack travel mm : 11.10

Rated speed rpm : 1165  
Tolerance 1/min : ± 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1096  
rack travel mm : 11.10

Rated speed rpm : 1166  
Tolerance 1/min : ± 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1097  
rack travel mm : 11.10

Rated speed rpm : 1167  
Tolerance 1/min : ± 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1098  
rack travel mm : 11.10

Rated speed rpm : 1168  
Tolerance 1/min : ± 5



rack travel mm : 4.00  
rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1099  
rack travel mm : 11.10

Rated speed rpm : 1169  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1100  
rack travel mm : 11.10

Rated speed rpm : 1170  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450  
rack travel mm : 5.75  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 585  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.70  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 13.75  
Tolerance mm : + 0.10

Rated speed rpm : 1050

L21

rack travel mm : 11.20  
Tolerance mm : + 0.05  
Rated speed rpm : 1050  
rack travel mm : 12.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.75  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.75  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 650  
rack travel mm : 12.65  
Tolerance mm : + 0.05

Pressure hPa : 450  
rack travel mm : 11.10  
Tolerance mm : + 0.20

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75

Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 11.0

---

LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 744 806  
  
Injection pump  
Pump designation : PES4P120A32ORS7431  
EP type number : 0 412 724 805  
  
Governor  
Governor design. : RQV325...1500PA1333  
: 1K  
Governor no. : 0 421 815 555  
  
Cust. part No. : 3393633

Customer-spec. information  
Customer : CDC  
Motor : 4BTA-A  
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 093  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test Lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 3- 4- 2  
  
Phasing : 0-90-180-270  
  
Start of delivery blocking  
  
°NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500  
  
Rack travel in mm : 15.00  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 325

Rack travel in mm : 8.10  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1555  
guide sleeve  
travel mm : 9.02  
Tolerance mm : +- 0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.21  
Tolerance mm : +- 0.20

Rated speed rpm : 1007  
guide sleeve  
travel mm : 5.41  
Tolerance mm : +- 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 3.15  
Tolerance mm : +- 0.25

Rated speed rpm : 1970

guide sleeve  
travel mm : 13.50  
Tolerance mm : +- 0.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.00

Rated speed rpm : 1555

Tolerance 1/min : +- 5

rack travel mm : 5.50

Rated speed rpm : 1710

Tolerance 1/min : +- 15

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1800

---

LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : +- 4.0

Control Lever difference

Grad : 39.0

tolerance degree : +- 6.0

Testing:

Rated speed rpm : 325

rack travel mm : 8.10  
Tolerance mm : + 0.10  
Rated speed rpm : 275  
CRT mm min. : > 8.80  
Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 1500  
rack travel mm : 15.00  
Tolerance mm : + 0.05  
Rated speed rpm : 1100  
rack travel mm : 14.70  
Tolerance mm : + 0.20  
Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : + 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1500  
Pressure hPa : -  
Pressure hPa : -  
Rated speed rpm : 750  
rack travel mm : 12.20  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1500  
Pressure hPa : 570  
rack travel mm : 13.40  
Tolerance mm : + 0.20  
Pressure hPa : 500  
rack travel mm : 12.90  
Tolerance mm : + 0.20

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.60  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 25.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 075 925Y  
  
Injection pump  
Pump designation : PES5M55C32ORS201  
EP type number : 0 410 055 972Y  
  
Governor  
Governor design. : RSF350/2500M56-13  
Governor no. : 0 420 021 171

Cust. part No. :

Customer spec. information  
Customer : MB-PKW  
Motor : OM605  
Power KW : 83.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 469 990 351  
  
Inlet press. bar : 1.0  
  
Test nozzle holder  
assembly : 1 688 901 111  
  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

\*NW after s.o.d. : 16.50  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Rated speed rpm : 350

Rack travel in mm : 7.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm : ± 0.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Ref. pressure  
ALDA / ADA hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

RATED SPEED

Tolerance mm : ± 0.30

Rated speed rpm : 3150  
rack travel mm : 0.50

Tolerance mm : ± 0.50

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1400

CRT mm max. : 1.95

---

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 7.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 475

rack travel mm : 5.40

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 1400

CRT mm max. : 1.95

rack travel mm : 7.40

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1400

rack travel mm : 12.75

Tolerance mm : ± 0.05

Rated speed rpm : 2300

rack travel mm : 12.30

Tolerance mm : ± 0.15

Rated speed rpm : 2500

rack travel mm : 11.90

Tolerance mm : ± 0.15

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1400

Ref. pressure

ALDA / ADA hPa : 940

rack travel mm : -0.10

Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1400

Ref. pressure

ALDA / ADA hPa : 900

rack travel mm : -0.40

Tolerance mm : ± 0.10

Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : ± 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Ref. pressure  
ALDA / ADA hPa : 1100  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.60  
Tolerance mm : ± 1.50

MD1

Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

control lever  
position degree : > 49.00

control lever  
position degree : < 46.50

---

#### SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

Rated speed rpm : 400  
Rack travel in mm : 8.25  
Tolerance mm : ± 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Vacuum hPa : 450.0

---

#### TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 350



Vacuum hPa : -450.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113

Combination No. : 0 401 846 913

Injection pump  
Pump designation : PE6P110A720R33243  
EP type number : 0 411 816 770

Governor  
Governor design. : RQV250...1100PA413  
Governor no. : 0 421 813 811

Cust. part No. :

Customer-spec. information  
Customer : HAEP  
Motor : WD615.68  
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 4.00  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1145  
guide sleeve  
travel mm : 8.40  
Tolerance mm : +- 0.10

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.10  
Tolerance mm : +- 0.10

Rated speed rpm : 700  
guide sleeve  
travel mm : 4.70  
Tolerance mm : +- 0.25

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.00  
Tolerance mm : +- 0.25

Rated speed rpm : 1250

guide sleeve  
travel mm : 9.70  
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 12.70  
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
position degree : 106.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.70  
Rated speed rpm : 1145  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1255  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1350

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 4.00  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 5.50

Rated speed rpm : 300

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.05  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 375  
rack travel mm : 11.00  
Tolerance mm : ± 0.10

Pressure hPa : 630  
rack travel mm : 12.95  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 170

Check  
speed 1/min : > 80

Check  
speed 1/min : < 190

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 401 848 828  
  
Injection pump  
Pump designation : PE8P120A520/4LS3850  
EP type number : 0 411 828 723  
  
Governor  
Governor design. : RQ300/900PA1230  
Governor no. : 0 421 801 792

Cust. part No. :

Customer-spec. information  
Customer : DHI  
Motor : D2848LE

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 8- 7- 2- 6- 3  
                  : - 4- 1  
  
Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
Barrel no. : 8

BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 12.20  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Rated speed rpm : 300

Rack travel in mm : 7.40  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 932  
guide sleeve  
travel mm : 6.37  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.44  
Tolerance mm : + 0.10

Rated speed rpm : 880  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 433  
guide sleeve  
travel mm : 4.94  
Tolerance mm : + 0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

CONTROL LEVER

control lever  
position degree : 32.0  
tolerance degree : + 4.0

control lever  
position degree : 94.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90  
Rated speed rpm : 925  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 970  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1100

---

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : ± 4.0

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 9.80

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.20  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80

Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

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Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 24.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.04.97  
Test oil : ISO 4113  
Combination No. : 0 402 046 832  
Injection pump  
Pump designation : PES6P110A72ORS3104  
EP type number : 0 412 016 712  
Governor  
Governor design. : RQV350...1100PA850  
Governor no. : 0 421 813 975  
Cust. part No. : 04187477KY0142-17

Customer-spec. information  
Customer : KHD  
Motor : BF6L513RC

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0  
x inside diameter : 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 6- 2- 4- 1- 5-  
: 3  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 13.95  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 350

Rack travel in mm : 7.90  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1160  
guide sleeve  
travel mm : 8.70  
Tolerance mm : + 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.20  
Tolerance mm : + 0.10

Rated speed rpm : 410  
guide sleeve  
travel mm : 2.90  
Tolerance mm : + 0.30

Rated speed rpm : 590  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + 0.30

Rated speed rpm : 1215  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1140

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.90  
Rated speed rpm : 1135  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1205  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1310

LOW IDLE

control lever  
position degree : 88.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 7.90  
Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 9.50  
Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 13.95  
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.40  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 370  
rack travel mm : 12.80  
Tolerance mm : ± 0.10

Pressure hPa : 450  
rack travel mm : 13.45  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80

Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : -  
Rated speed rpm : 450  
Del. quantity cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350  
Del. quantity cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance

cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.04.97  
Test oil : ISO 4113

Combination No. : 0 402 066 706

Injection pump  
Pump designation : PES6P120A12ORS3358  
EP type number : 0 412 026 784

Governor  
Governor design. : RSV475...1250P2A613  
: 1  
Governor no. : 0 421 833 505

Cust. part No. : 3927357

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-590 ELITE  
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 7.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.30  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 140.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 7.5

Rated speed rpm	: 475
Rack travel in mm	: 5.40
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 21.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.5
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring pre-tension click setting x	: 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
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M15

Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 140.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 107.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 10.30
Rated speed rpm	: 1295
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1365
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1500

rack travel mm	: 4.00
Rated speed rpm	: 1375

LOW IDLE

control lever position degree	: 83.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 4.90
Tolerance mm	: + 0.10

Testing:

Rated speed rpm	: 475
rack travel mm	: 5.40
Tolerance mm	: + 0.10

rack travel mm : 2.00  
Rated speed rpm : 595  
Tolerance 1/min : ± 30

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.30  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.30  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.30  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.00  
Tolerance mm : ± 0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 10.75  
Tolerance mm : ± 0.20

Pressure hPa : 560  
rack travel mm : 9.55  
Tolerance mm : ± 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 157.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.04.97  
Test oil : ISO 4113  
Combination No. : 0 402 066 711  
Injection pump  
Pump designation : PES6P120A120RS3358  
EP type number : 0 412 026 784  
Governor  
Governor design. : RSV475...1100P2A661  
Governor no. : 0 421 833 581  
Cust. part No. : 3283574

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA ELITE  
Power KW : 139.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 095  
Inlet press. bar : 2.0  
Overflow quantity min. l/h : 100  
Tolerance l/h : ± 20.0  
Test nozzle holder assembly : 1 688 901 103  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.25  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance \*NW : ± 0.50  
Start of delivery blocking  
\*NW after s.o.d. : 6.75  
Tolerance : ± 0.10  
Check tolerance \*NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100



Rack travel in mm : 12.90  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 180.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 475

Rack travel in mm : 7.20  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 60.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

governor spring  
 pre-tension  
 click setting x : 3.75

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1600

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 180.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 102.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : + 15

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1400

rack travel mm : 4.00  
 Rated speed rpm : 1280

---

LOW IDLE

control lever  
 position degree : 84.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475  
 rack travel mm : 6.70  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 475  
rack travel mm : 7.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 645  
Tolerance 1/min : ± 30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.90  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.90  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1600  
rack travel mm : 12.90  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm : ± 0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.10  
Tolerance mm : ± 0.20

Pressure hPa : 560  
rack travel mm : 9.60  
Tolerance mm : ± 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0

M19

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.04.97  
Test oil : ISO 4113

Combination No. : 0 402 076 801

Injection pump  
Pump designation : PES6P120A132C/5RS337  
: 2Y  
EP type number : 0 412 026 793

Governor  
Governor design. : RSV350...1050P1A641  
Governor no. : 0 421 833 553

Cust. part No. : 1382923

---

Customer-spec. information  
Customer : SCANIA  
Motor : DSI1172A,-C1157A

---

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper  
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75

Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 16.75  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 263.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

Rack travel in mm	: 6.00
Tolerance mm	: ± 0.20
Del. quantity cm <sup>3</sup> /1000 strokes	: 20.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 4.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
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Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 263.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 33.0
tolerance degree	: ± 4.0
control lever position degree	: 83.0
tolerance degree	: ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 750
rack travel mm	: 15.70
Rated speed rpm	: 788
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 850
Rated speed rpm	: 751
rack travel mm	: 15.70
Rated speed rpm	: 789
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 850
Rated speed rpm	: 752
rack travel mm	: 15.70
Rated speed rpm	: 790
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 850

Rated speed rpm : 753  
rack travel mm : 15.70

Rated speed rpm : 791  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 850

Rated speed rpm : 754  
rack travel mm : 15.70

Rated speed rpm : 792  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 850

Rated speed rpm : 755  
rack travel mm : 15.70

Rated speed rpm : 793  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 850

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 16.75  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 16.75  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 13.50  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 295  
rack travel mm : 14.30  
Tolerance mm : + 0.20

Pressure hPa : 640  
rack travel mm : 16.00  
Tolerance mm : + 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.50  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 076 816  
  
Injection pump  
Pump designation : FES6P120A720PS3340  
EP type number : 0 412 026 773  
  
Governor  
Governor design. : RSV650...1100P8A566  
: 5  
Governor no. : 0 421 833 601

Cust. part No. :

Customer-spec. information  
Customer : NH  
Power kW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 086  
  
Inlet press. bar : 1.5  
  
Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 20.0  
  
Test nozzle holder  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery blocking  
  
Check  
tolerance °NW : ± 0.30  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 11.45  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm3/1000 strokes : 159.0

---

Tolerance  
 cm3/1000 strokes : + 1.0

---

Check tolerance  
 cm3/1000S. : + 6.0

---

Speed

---

Tolerance  
 cm3/1000 strokes : 5.0

---

Check tolerance  
 cm3/1000S. : 9.0

---

Rated speed rpm : 650

Rack travel in mm : 4.60  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm3/1000 strokes : 23.0  
 Tolerance  
 cm3/1000 strokes : + 3.0  
 Check tolerance  
 cm3/1000S. : + 6.0

Speed  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : +- 0.20

governor spring  
 pre-tension  
 click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025  
 Aneroid pressure  
 hPa : 1600  
 Del. quantity  
 cm3/1000 strokes : 159.0  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 6.0

Speed  
 Tolerance  
 cm3/1000 strokes : 5.0  
 Check tolerance  
 cm3/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 91.0

RATED SPEED

rack travel mm : 4.00  
 Rated speed rpm : 1100

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1067  
 rack travel mm : 10.40

Rated speed rpm : 1097  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1250

Rated speed rpm : 1068  
 rack travel mm : 10.40

Rated speed rpm : 1098  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : + 0.55

Rated speed rpm : 1069  
 rack travel mm : 10.40

Rated speed rpm : 1099

Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1070  
rack travel mm : 10.40

Rated speed rpm : 1100  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1071  
rack travel mm : 10.40

Rated speed rpm : 1101  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1072  
rack travel mm : 10.40

Rated speed rpm : 1102  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

---

#### LOW IDLE

control lever  
position degree : 74.0

Setting point w/out bumper spring

Rated speed rpm : 650  
rack travel mm : 4.10  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 650  
rack travel mm : 4.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 700

---

#### TORQUE CONTROL

Rated speed rpm : 1025  
rack travel mm : 11.45  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.30  
Tolerance mm : + 0.10

Rated speed rpm : 700  
rack travel mm : 12.35  
Tolerance mm : + 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1600  
rack travel mm : 12.30  
Tolerance mm : + 0.15

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.80  
Tolerance mm : + 0.15

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 1050  
rack travel mm : 11.50  
Tolerance mm : + 0.10

#### Start interlock

Rated speed rpm : > 100  
Check  
speed 1/min : > 80

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0



Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113

Combination No. : 0 402 670 812

Injection pump  
Pump designation : PE12P120A320LS7902  
EP type number : 0 412 620 848

Governor  
Governor design. : RSV350...1050POA662  
Governor no. : 0 421 833 579

Cust. part No. : 027 074 4302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 444 LA  
Power KW : 448.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8  
: - 4- 11- 10- 2  
: - 7

Phasing : 0-45-60-105-120  
: -180-225-240-285  
: -345

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.40  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 6.20  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030  
Aneroid pressure  
hPa : 1250

Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 94.0  
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070  
rack travel mm : 13.50

Rated speed rpm : 1145  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1071  
rack travel mm : 13.50

Rated speed rpm : 1146  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1072  
rack travel mm : 13.50

Rated speed rpm : 1147  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 1073  
rack travel mm : 13.50

Rated speed rpm : 1148  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 1074  
rack travel mm : 13.50

Rated speed rpm : 1149  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1075  
rack travel mm : 13.50

Rated speed rpm : 1150  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : +- 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.20  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 9.30

#### SET IDLE AUXILIARY SPRING

NO1

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 13.40  
Tolerance mm : +- 0.05

Rated speed rpm : 800  
rack travel mm : 13.40  
Tolerance mm : +- 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1250  
rack travel mm : 1.60  
Tolerance mm : +- 0.20

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 550  
rack travel mm : 0.80  
Tolerance mm : +- 0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.50  
Tolerance mm : ± 0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.04.97  
Test oil : ISO 4113

Combination No. : 0 402 676 825

Injection pump  
Pump designation : PE6P120A320RS7430  
EP type number : 0 412 626 960

Governor  
Governor design. : RSV300...850P1A614  
Governor no. : 0 421 833 502

Cust. part No. : 11031231 P05 v.03/97

---

Customer-spec. information  
Customer : VCE  
Motor : TD 103 KAE  
Power KW : 190.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.1

vibration damper  
(RoBo diaphragm) : 4.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 300  
Tolerance l/h : ± 20.0

Test nozzle holder assembly : 1 688 901 103

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.25  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 500

---

Rack travel in mm : 12.20  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 306.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 7.0
Check tolerance cm <sup>3</sup> /1000S.	: 11.0

Rated speed rpm : 325

Rack travel in mm	: 4.20
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 34.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance cm <sup>3</sup> /1000S.	: + 6.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring pre-tension click setting x	: 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500

Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 306.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 7.0
Check tolerance cm <sup>3</sup> /1000S.	: 11.0

CONTROL LEVER

control lever position degree	: 52.0
tolerance degree	: + 4.0

control lever position degree	: 102.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 10.80
Rated speed rpm	: 875
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 950
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1100

LOW IDLE

control lever position degree	: 76.0
tolerance degree	: + 4.0

control lever position degree	: 26.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 325
rack travel mm	: 3.70
Tolerance mm	: + 0.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.20  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 500  
rack travel mm : 12.20  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 11.80  
Tolerance mm : + 0.10

Rated speed rpm : 570  
rack travel mm : 12.00  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 12.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.20  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.35  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 575  
rack travel mm : 2.35  
Tolerance mm : + 0.20

Pressure hPa : 180  
rack travel mm : 0.25  
Tolerance mm : + 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113

Combination No. : 0 402 678 827

Injection pump  
Pump designation : PE8P120A320LS7886  
EP type number : 0 412 628 903

Governor  
Governor design. : PSV550...850P0A574  
Governor no. : 0 421 833 476

Cust. part No. : 0260741102

Customer-spec. information

Customer : MB-NFZ  
Motor : OM442LA  
Power kW : 329.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 120  
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3  
: -4-1

Phasing : 0-45-90-135-180  
: -270-315  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50

Start of delivery mark  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 830

Rack travel in mm : 15.40  
 Tolerance mm : +- 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 264.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 550

Rack travel in mm : 3.90  
 Tolerance mm : +- 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : +- 0.20

governor spring  
 pre-tension  
 click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 830  
 Aneroid pressure  
 hPa : 1200

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 264.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 80.0  
 tolerance degree : +- 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 870  
 rack travel mm : 14.40

Rated speed rpm : 920  
 Tolerance 1/min : +- 4  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : +- 0.55  
 Rated speed rpm : 1050

Rated speed rpm : 871  
 rack travel mm : 14.40

Rated speed rpm : 921  
 Tolerance 1/min : +- 4  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : +- 0.55  
 Rated speed rpm : 1050

Rated speed rpm : 872  
 rack travel mm : 14.40

Rated speed rpm : 922  
 Tolerance 1/min : +- 4  
 rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1050

Rated speed rpm : 873  
rack travel mm : 14.40

Rated speed rpm : 923  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1050

Rated speed rpm : 874  
rack travel mm : 14.40

Rated speed rpm : 924  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1050

Rated speed rpm : 875  
rack travel mm : 14.40

Rated speed rpm : 925  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1050

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 550  
rack travel mm : 3.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 560  
Tolerance 1/min : + 30

Rated speed rpm : 100

N08

CRT mm min. : > 19.00

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 830  
rack travel mm : 15.40  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 15.40  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 15.40  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.30  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 500  
rack travel mm : 11.35  
Tolerance mm : + 0.20

Pressure hPa : 710  
rack travel mm : 13.30  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 283.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113

Combination No. : 0 402 698 033

Injection pump  
Pump designation : PE8H120/320LS15  
EP type number : 0 412 628 004

Governor  
Governor design. : RE36  
Governor no. : 0 421 890 369

Cust. part No. : 0250745602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 442 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 4- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point (P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value (P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Setting point (M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value (M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with deenergised adjusting magnet and control rod in stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR (ALL P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check tolerance V : +/- 1.20

Engine speed min-1: 600
Difference Amplitude to Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 2.800
Prestroke solenoid Stroke mm : 7.40
Del. quantity cm3/1000 strokes : 345.0
Tolerance cm3/1000 strokes : +/- 2.0
Check tolerance cm3/1000S. : +/- 6.0
Speed Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.900
Prestroke solenoid Stroke mm : 8.00
Del. quantity cm3/1000 strokes : 335.0
Tolerance cm3/1000 strokes : +/- 3.0
Check tolerance cm3/1000S. : +/- 6.0

Rated speed rpm : 550
Uact V : 2.700
Prestroke solenoid Stroke mm : 9.50
Del. quantity cm3/1000 strokes : 354.0
Tolerance cm3/1000 strokes : +/- 3.0
Check tolerance cm3/1000S. : +/- 6.0

Rated speed rpm : 630  
Uact V : 2.000  
Prestroke solenoid  
Stroke mm : 5.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

TEST POINT L1

Rated speed rpm : 300  
Uact V : 1.500  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060  
Prestroke solenoid  
Stroke mm : 8.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 1.900  
Prestroke solenoid  
Stroke mm : 10.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 113.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113

Combination No. : 0 402 736 892

Injection pump  
Pump designation : PES6P120A120RS7400  
EP type number : 0 412 726 950

Governor  
Governor design. : RQV350...1100PA1244  
: 1K  
Governor no. : 0 421 815 488

Cust. part No. : 3282610

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 221.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.30



Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.40  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.28  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm : + 0.20

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.80  
Tolerance mm : + 0.25

Rated speed rpm : 430

guide sleeve  
travel mm : 4.33  
Tolerance mm : + 0.25

Rated speed rpm : 1380  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 14.30  
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree : + 4.0

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.30  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1255  
Tolerance 1/min : + 15

Check  
speed 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

control lever  
position degree : 20.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.40  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 8.30

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 15.30  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 14.90  
Tolerance mm : + 0.10

Rated speed rpm : 900  
rack travel mm : 15.25  
Tolerance mm : + 0.15

Rated speed rpm : 600  
rack travel mm : 14.80  
Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 15.30

Tolerance mm : + 0.05  
Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 11.00  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1100  
Pressure hPa : 900  
rack travel mm : 14.50  
Tolerance mm : + 0.20

Pressure hPa : 400  
rack travel mm : 11.85  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 300

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
Test oil : ISO 4113

Combination No. : 0 402 736 893

Injection pump  
Pump designation : PES6P120A120RS7400  
EP type number : 0 412 726 950

Governor  
Governor design. : RQV350...1100FA1244  
: 2K  
Governor no. : 0 421 815 489

Cust. part No. : 3282609

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power kW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 125  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.50  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 211.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.50  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 25.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159  
 guide sleeve  
 travel mm : 10.28  
 Tolerance mm : + 0.15

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.93  
 Tolerance mm : + 0.20

Rated speed rpm : 710  
 guide sleeve  
 travel mm : 5.79  
 Tolerance mm : + 0.25

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 4.70  
 Tolerance mm : + 0.25

Rated speed rpm : 1380  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1215

Rack travel in mm : 13.30  
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 211.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 66.0  
 tolerance degree : + 4.0

control lever  
 position degree : 122.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.50  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : + 15

Check  
speed 1/min : + 20  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

control lever  
position degree : 20.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 8.60

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 15.50  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 15.00  
Tolerance mm : + 0.10

Rated speed rpm : 900  
rack travel mm : 15.40  
Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050  
Pressure hPa : 1500  
rack travel mm : 15.50  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 11.05  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 820  
rack travel mm : 14.15  
Tolerance mm : + 0.20

Pressure hPa : 420  
rack travel mm : 12.10  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 280

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 300

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.04.97  
Test oil : ISO 4113

Combination No. : 0 402 776 839

Injection pump  
Pump designation : PES6P120A320RS7437  
EP type number : 0 412 726 970

Governor  
Governor design. : RSV550...1000P1A678  
Governor no. : 0 421 833 597

Cust. part No. : 836854748

Customer-spec. information

Customer : SISU  
Motor : 645 DSIE  
Power KW : 270.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.55  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.30  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0



Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  


---

 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0  


---

Rated speed rpm : 550  
 Rack travel in mm : 4.00  
 Tolerance mm : + 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 22.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + 0.20  
 governor spring  
 pre-tension  
 click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 2000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 270.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

CONTROL LEVER

control lever  
 position degree : 50.0  
 tolerance degree : + 4.0  
 control lever  
 position degree : 100.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.30  
 Rated speed rpm : 1040  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1090  
 Tolerance 1/min : + 15  
 rack travel mm : 0.80  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1200

LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : + 4.0  
 control lever  
 position degree : 30.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 550  
 rack travel mm : 3.50  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 550  
 rack travel mm : 4.00  
 Tolerance mm : + 0.20  
 rack travel mm : 2.00

Rated speed rpm : 610  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.30  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 14.30  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 14.30  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1410  
rack travel mm : 3.10  
Tolerance mm : + 0.20

Pressure hPa : 700  
rack travel mm : 0.25  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 440

Check speed 1/min : > 80  
Check speed 1/min : < 460

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 2000  
Rated speed rpm : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 246.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000s. : + 6.0

Speed Tolerance cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance cm<sup>3</sup>/1000s. : 14.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 177.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000s. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance cm<sup>3</sup>/1000s. : + 19.0

---

LOW IDLE

Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance cm<sup>3</sup>/1000s. : + 5.0  
Speed Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.97  
 Test oil : ISO 4113  
 Combination No. : 0 403 446 333  
 Injection pump  
 Pump designation : PES6MW100/720RS1131  
 : 1  
 EP type number : 0 413 406 165  
 Governor  
 Governor design. : RQV300...1300MW151  
 Governor no. : 0 420 083 333  
 Cust. part No. : 0260747102

Customer spec. information  
 Customer : MB-NFZ  
 Motor : OM 366 LA  
 Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
 Test oil inlet  
 temp. °C : 40  
 Tolerance °C : + 2.0  
 Overflow valve : 1 419 992 198  
 Inlet press. bar : 1.5  
 Test nozzle holder  
 assembly : 1 688 901 101  
 Opening pressure  
 bar : 208.5  
 Tolerance bar : + 1.5  
 Test lines : 1 680 750 089  
 Outside diameter : 8.0

x inside diameter : 3.0  
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
 Tolerance bar : + 1.0  
 Prestroke mm : 3.65  
 Tolerance mm : + 0.05  
 Check  
 tolerance mm : +- 0.10  
 Rack travel in mm : 10.50  
 Tolerance mm : + 1.50  
 Firing order : 1- 5- 3- 6- 2-  
 : 4  
 Phasing : 0-60-120-180-240  
 Tolerance : + 0.50  
 Check  
 tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300  
 Rack travel in mm : 13.15  
 Tolerance mm : + 0.05  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 100.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 300

Rack travel in mm : 6.50  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355  
 guide sleeve  
 travel mm : 8.65  
 Tolerance mm : + 0.15

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.37  
 Tolerance mm : + 0.20

Rated speed rpm : 885  
 guide sleeve  
 travel mm : 5.01  
 Tolerance mm : + 0.25

Rated speed rpm : 490  
 guide sleeve  
 travel mm : 2.86  
 Tolerance mm : + 0.25

Rated speed rpm : 1610  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
 position degree : 116  
 Rated speed rpm : 1440

Rack travel in mm : 10.00  
 Tolerance mm : + 2.70

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 100.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
 position degree : 113.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.10  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1460  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

---

LOW IDLE

control lever  
 position degree : 69.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 6.50  
Tolerance mm : + 0.10  
Rated speed rpm : 200  
CRT mm min. : > 8.00

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.15  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 13.15  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.15  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 500  
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 1.75  
Tolerance mm : + 0.15

Pressure hPa : 200  
rack travel mm : 0.75  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 250

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

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End of test specification sheet